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N.M.T. DEPT. OF EDUCATION ANNUAL REPORT 1901



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ANNUAL REPORT  
OF THE  
DEPARTMENT OF EDUCATION  
OF THE  
NORTH-WEST TERRITORIES

1901

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PRINTED BY ORDER OF THE LEGISLATIVE ASSEMBLY

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DEPARTMENT OF EDUCATION,  
REGINA, *April 7, 1902.*

*To His Honour*

AMÉDÉE EMMANUEL FORGET,

*Lieutenant Governor of the North-West Territories.*

SIR,—

I have the honour to transmit herewith the Annual Report of the Department of Education for the year 1901.

I have the honour to be, Sir,

Your obedient servant,

F. W. G. HAULTAIN,  
*Commissioner of Education*



## CONTENTS

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	PAGE.
Report of Deputy Commissioner of Education.....	7
Report of Superintendent of Education.....	34
Appendices :	
A. Education of Deaf Mutes.....	51
B. Maintenance of Schools.....	53
C. Consolidation of Schools.....	56
D. Teachers' Associations .....	58
E. Dominion Educational Association.....	59
F. Programme of Studies.....	70
G. Regulations Governing Certificates.....	83
H. List of Authorised Text Books.....	93
I. Town School Districts.....	95
J. School Districts Erected, 1901.....	96
K. Examination Papers.....	100



# REPORT

## OF THE

# DEPUTY COMMISSIONER.

DEPARTMENT OF EDUCATION,  
REGINA, N.W.T., *April 1, 1902*

F. W. G. HAULTAIN, Esq., M.L.A.,  
*Commissioner of Education.*

SIR,—

I have the honour to submit herewith the Annual Report of the Department of Education for the year 1901.

### STATISTICS.

#### GENERAL Summary.

Number of school districts.....		713
Increase for the year.....	83	.....
Number of districts having schools in operation.....		564
Increase for the year.....	72	.....
Number of departments in operation.....		682
Increase for the year.....	89	.....
Number of pupils enrolled.....		23,837
Increase for the year.....	3,494	.....
Average attendance of pupils.....		11,968
Increase for the year.....	2,538	.....
Percentage attendance of pupils.....		50%
Increase for the year.....	3.65%	.....
Average length of school year—days.....		162
Decrease for the year.....	6	.....
Total grants earned by school districts.....		\$185,721.56
Increase for the year.....	\$22,707.56	.....
Total grants paid to school districts.....		\$162,215.07
Decrease for the year.....	\$ 6,106.96	.....
School debentures authorised.....		\$109,210.00
Increase for the year.....	\$14,710.00	.....
School debentures registered.....		\$ 90,360.00
Increase for the year.....	\$12,560.00	.....
Amount expended on school buildings and grounds.....		\$ 95,300.50
Amount expended for teachers' salaries.....		\$274,040.43
Amount expended for all other purposes.....		\$179,468.35

## 1.—SCHOOL Districts.

IN EXISTENCE DECEMBER 31, 1900					ERECTED DURING 1901			
Class	Assa.	Alta.	Sask.	Totals	Assa.	Alta.	Sask.	Totals
Public . . . . .	333	206	72	611	29	45	5	79
Separate . . .	6	6	3	15	.....	1	.....	1
*Unorg'nis'd	2	1	1	4	1	1	1	3
Totals.....	341	213	76	630	30	47	6	83

As there were no districts disorganised during the year the total number of districts in existence 31st December, 1901, was 713.

\*These are in outlying settlements in which schools are maintained partly by Government aid. They have not been formally established as districts.

## 2.—NUMBER of Schools open during the years 1900 and 1901, and Departments in each.

Schools having	Assa.		Alta.		Sask.		Total Schools		Total Depts.	
	1900	1901	1900	1901	1900	1901	1900	1901	1900	1901
1 Department. . . .	265	307	144	169	48	48	457	523	457	524
2 " . . . . .	5	6	5	7	3	5	13	18	26	36
3 " . . . . .	7	5	4	3	.....	...	11	8	33	24
4 " . . . . .	.....	2	2	4	.....	.....	2	6	3	24
6 " . . . . .	1	1	2	.....	1	1	4	2	24	12
7 " . . . . .	2	1	.....	2	.....	.....	2	3	14	21
8 " . . . . .	.....	.....	1	.....	.....	.....	1	.....	8	.....
9 " . . . . .	1	2	.....	1	.....	.....	1	3	9	27
13 " . . . . .	.....	.....	1	.....	.....	.....	1	.....	13	.....
14 " . . . . .	.....	.....	.....	1	.....	.....	.....	1	.....	14
Totals . . . . .	281	324	159	187	52	54	492	564	592	682

## 3.—ATTENDANCE of Pupils.

AT ALL SCHOOLS	1900	1901	INCREASE
No. of pupils attending school during year..	20,343	23,837	3,494
No. of boys " " " "	10,713	12,310	1,597
No. of girls " " " "	9,630	11,527	1,897
Total aggregate attendances for 1st term..	1,059,630	1,160,263	100,633
" " " " 2nd " "	849,974	958,407	108,433
" " " " year.....	1,909,604	2,118,670	209,066

## 4.—CLASSIFICATION of Pupils.

STANDARDS	1900	1901	INCREASE	Percent. of enrol- ment
Standard 1, Part 1.....	5,618	6,912	1,294	29.00
" 1, Part 2.....	3,442	3,933	491	16.50
" 2.....	3,953	4,343	390	18.20
" 3.....	3,885	4,519	634	19.00
" 4.....	2,110	2,566	456	10.75
" 5.....	920	1,050	130	4.40
" 6.....	262	301	39	1.25
" 7.....	128	174	46	0.75
" 8.....	25	39	14	0.15
Totals.....	20,343	23,837	3,494	100

4. (a).—COMPARATIVE Statement of Attendance and Classification of Pupils in Rural and Town and Village Schools.

	Rural schools	Town and village schools
Number of pupils enrolled . . . . .	13,777	10,060
Aggregate days' attendances of pupils . . . . .	1,062,994	1,055,676
Daily average attendance of pupils . . . . .	6,609	5,359
Percentage of attendance to total enrolment . . . . .	48	53
Average length of school year, days . . . . .	157 $\frac{3}{4}$	206
Average number of pupils enrolled in each department . . . . .	27	58
Classification.—Standard 1, Part 1 . . . . .	4,052	2,860
“ 1, Part 2 . . . . .	2,318	1,615
“ 2 . . . . .	2,690	1,653
“ 3 . . . . .	2,724	1,795
“ 4 . . . . .	1,481	1,085
“ 5 . . . . .	434	616
“ 6 . . . . .	64	237
“ 7 . . . . .	9	165
“ 8 . . . . .	5	34

Note: (1) The second column includes only schools in town and village districts as defined by The School Ordinance. In the 1900 Report, this column included returns from schools in small places that had not been established as villages under The Village Ordinance. (2) This table includes returns from 505 rural districts (including 7 unorganised districts) and 59 town and village districts.

5.—LENGTH of School Year.

Number of schools open between 21 and 50 days . . . . .	12
“ “ “ “ 51 “ 100 “ . . . . .	26
“ “ “ “ 101 “ 150 “ . . . . .	184
“ “ “ “ 151 “ 200 “ . . . . .	165
“ “ “ over 200 days . . . . .	177
Total . . . . .	564
Average time rural schools were open (505 schools) . . . . .	157 $\frac{3}{4}$ days
“ “ village “ “ “ ( 34 “ ) . . . . .	207 $\frac{1}{2}$ “
“ “ town “ “ “ ( 25 “ ) . . . . .	203 $\frac{1}{2}$ “
“ length of school year for all schools . . . . .	162 “

Note: The prevalence of epidemics of contagious diseases together with the large number of new schools that opened late in the year accounts for the comparative shortness of the school year when compared with the year 1900.



## 6.—TEACHERS Employed. Certificates and Salaries.

Class of Certificate	Schools open the whole year				Schools open part of year			
	No.	Salaries per month			No.	Salaries per month		
		Highest	Lowest	Average		Highest	Lowest	Average
First, male.....	88	\$ c. 108 33	\$ c. 40 00	\$ c. 59 80	31	\$ c. 50 00	\$ c. 40 00	\$ c. 46 16
“ female.....	34	66 66	40 00	47 62	18	50 00	40 00	43 00
Second, male.....	97	65 00	40 00	45 83	116	50 00	35 00	43 50
“ female.....	129	60 00	30 00	43 12	139	50 00	33 50	41 00
Third, male.....	1	40 00	.....	.....	13	45 00	40 00	41 19
“ female.....	10	66 66	33 33	39 79	32	45 00	30 00	38 00
Permit, male.....	6	50 00	26 00	41 52	19	50 00	33 33	42 10
“ female.....	2	50 00	33 33	41 66	26	50 00	30 00	39 50
Kindergartner.....	1	41 66	.....	.....	.....	.....	.....	.....
Town Schools					Village Schools			
Certificate	No.	Highest	Lowest	Average	No.	Highest	Lowest	Average
First, male.....	34	\$ c. 108 33	\$ c. 45 00	\$ c. 74 00	23	\$ c. 70 00	\$ c. 41 66	\$ c. 55 65
“ female.....	21	58 33	40 00	47 50	7	66 66	40 00	51 55
Second, male.....	9	64 58	41 66	49 13	9	60 00	45 00	49 77
“ female.....	69	60 00	33 33	44 44	21	50 00	37 50	42 24
Third, male.....	.....	.....	.....	.....	5	66 66	33 33	41 58
“ female.....	2	50 00	43 83	46 91	.....	.....	.....	.....
Permit, male.....	1	50 00	.....	.....	.....	.....	.....	.....
“ female.....	1	41 66	.....	.....	.....	.....	.....	.....
Kindergartner.....	1	41 66	.....	.....	.....	.....	.....	.....
Yearly Rural Schools					In all Schools			
Certificate	No.	Highest	Lowest	Average	No.	Highest	Lowest	Average
First, male.....	31	\$ c. 55 00	\$ c. 40 00	\$ c. 47 38	119	\$ c. 108 33	\$ c. 40 00	\$ c. 56 25
“ female.....	6	46 66	40 00	43 47	52	66 66	40 00	46 04
Second, male.....	79	65 00	40 00	45 00	213	65 00	35 00	44 53
“ female.....	39	50 00	30 00	41 30	268	60 00	30 00	42 44
Third, male.....	1	40 00	.....	.....	14	45 00	40 00	41 10
“ female.....	5	40 00	35 00	38 00	42	66 66	30 00	38 45
Permit, male.....	4	46 00	26 00	38 83	25	50 00	26 00	41 95
“ female.....	1	33 33	.....	.....	28	50 00	30 00	39 70
Kindergartner.....	.....	.....	.....	.....	1	41 66	.....	.....

Total number of teachers employed during the year.....762

“ “ “ “ at one time.....681

Average salary per month paid to all teachers employed..... \$45.00

Altogether there were 122 schools or rooms that changed teachers during the year.

## 7.—SCHOOL Houses and Equipment.

Compiled from Inspectors' Reports for 1901.

## School houses (material):

Log.....	143
Frame.....	355
Brick.....	28
Stone.....	27
Other material.....	10
No. of schools provided with insufficient black-board space.....	109
“ “ having a satisfactory system of ventilation.....	92
“ “ furnished with “patent” desks.....	400
“ “ “ “ unsatisfactory desks.....	80
“ “ provided with a school library.....	105
Total number of volumes in these libraries.....	4,229
No. of schools provided with:	
Numeral frame.....	345
Reading tablets.....	253
Set of dry measures—pint, quart, gallon, etc.....	77
Sand modelling board.....	33
Dictionary.....	236
Globe.....	453
Map of world.....	433
“ “ Canada.....	384
“ “ North-West Territories.....	101
“ “ North America.....	220
Set of drawing models.....	28
Music chart.....	11

## 8.—SCHOOL District Debentures.

YEAR	DEBENTURES AUTHORISED		DEBENTURES REGISTERED	
	No. of school districts	Amount	No. of school districts	Amount
1898	39	\$ 23,985 00	30	\$20,433 00
1899	33	54,550 00	29	42,750 00
1900	61	94,500 00	52	77,800 00
1901	74	109,210 00	63	90,360 00

## 9.—RECEIPTS and Expenditures.

Summary of Receipts and Expenditures of all School Districts for the year 1901.

<i>Receipts.</i>		
	\$	c.
Cash on hand, December 31, 1900.....	34,653	30
Proceeds of debentures.....	88,835	82
Taxes collected.....	243,146	27
Government grants.....	163,843	22
Pupils' fees.....	1,833	44
Borrowed by note.....	77,550	33
Amounts advanced by treasurers.....	1,258	93
Other sources.....	9,441	45
	<u>\$620,562</u>	<u>76</u>
<i>Expenditures.</i>		
	\$	c.
Teachers' salaries.....	274,040	43
Officials' salaries.....	14,570	24
Paid on debentures.....	39,429	23
Paid on notes—including interest.....	65,956	54
School buildings and repairs.....	86,810	75
School grounds.....	8,489	75
School furniture.....	12,834	75
Library and reference books.....	625	31
Apparatus and equipment.....	3,566	58
Supplies, stationery, etc.....	5,352	33
Carttaking and fuel.....	23,684	12
Insurance.....	2,924	33
Other expenditures.....	10,524	92
Balance on hand, December 31, 1901.....	17,753	48
	<u>\$620,562</u>	<u>76</u>

Note: The above table has been compiled from the Annual Financial Statements received from 495 rural districts and 59 town and village districts.

9 (a)—COMPARATIVE Statement showing Receipts and Expenditures of Town and Village School Districts and Rural Districts for the year 1901.

	Town and village districts	Rural districts
<i>Receipts.</i>		
	\$ c.	\$ c.
Cash on hand December 31, 1900.....	12,311 33	22,341 97
Proceeds of debentures.....	58,704 85	30,130 97
Taxes collected.....	107,474 72	135,671 55
Government grants.....	57,424 73	106,418 49
Pupils' fees.....	1,314 46	518 98
Borrowed by note.....	38,252 34	39,297 99
Amounts advanced by treasurers.....	344 74	914 19
Other sources.....	6,505 65	2,935 80
	\$282,332 82	\$338,229 94
<i>Expenditures.</i>		
	\$ c.	\$ c.
Teachers' salaries....	102,341 12	171,699 31
Officials' salaries.....	4,635 35	9,934 89
Paid on debentures.....	22,150 85	17,278 38
“ “ notes—including interest.....	29,234 81	36,721 73
School buildings and repairs.....	46,573 96	40,236 79
“ grounds.....	5,245 90	3,243 85
“ furniture.....	5,476 74	7,358 01
Library and reference books.....	236 42	388 89
Apparatus and equipment.....	1,083 45	2,483 13
Supplies, stationery, etc.....	2,122 55	3,229 78
Caretaking and fuel.....	15,098 26	8,585 86
Insurance.....	1,404 76	1,519 57
Other expenditures.....	4,389 04	6,135 88
Balance on hand December 31, 1901.....	42,339 61	29,413 87
	\$282,332 82	\$338,229 94

## 10.—ASSETS and Liabilities.

Summary of assets and liabilities of all School Districts for the year 1901.

<i>Assets.</i>	
Cash on hand .....	\$ 71,753 48
Arrears of taxes due .....	98,401 91
Government grants due .....	70,852 30
Estimated value of land and outbuildings .....	559,991 73
“ “ furniture and apparatus .....	80,082 71
“ “ school libraries .....	4,722 19
Other assets .....	31,962 44
	<hr/> \$917,766 76
<i>Liabilities.</i>	
Teachers' salaries .....	\$ 43,142 22
Debenture indebtedness .....	318,097 79
Outstanding accounts .....	73,808 93
Amount due treasurers for moneys advanced .....	1,258 93
Excess of assets over liabilities .....	481,458 89
	<hr/> \$917,766 76

## 10 (a)—COMPARATIVE Statement showing Assets and Liabilities of Town and Village School Districts and Rural Districts for the year 1901.

	Town and village districts	Rural districts
<i>Assets.</i>		
Cash on hand .....	\$ 42,339 61	\$ 29,413 87
Arrears of taxes due .....	23,333 40	75,068 51
Government grants due .....	28,204 02	42,648 28
Estimated value of land and buildings .....	318,689 06	241,302 67
“ “ furniture and apparatus .....	30,877 94	49,204 77
“ “ school libraries .....	2,804 14	1,918 05
Other assets .....	29,463 10	2,499 34
	<hr/> \$475,711 27	<hr/> \$442,055 49
<i>Liabilities.</i>		
Teachers' salaries .....	\$ 7,360 00	\$ 35,782 22
Debenture indebtedness .....	229,238 19	88,859 60
Outstanding accounts .....	39,189 89	34,619 04
Amounts due treasurers .....	344 74	914 19
Excess of assets over liabilities .....	199,578 45	281,880 44
	<hr/> \$475,711 27	<hr/> \$442,055 49

## 11.—CERTIFICATES Granted.

	N.W.T.	Other provinces	Total	Grand Totals
<b>I. Licenses to teach.</b>				
<i>(a) Interim Certificates.</i>				
1st Class to N. W. T. teachers.....	26	..	26	
“ teachers from Ontario .....	..	21		
“ “ “ Manitoba .....	..	5		
“ “ “ Nova Scotia.....	..	1	27	53
2nd Class to N. W. T. teachers.....	75	..	75	
“ teachers from Ontario .....	..	79		
“ “ “ Manitoba .....	..	15		
“ “ “ Quebec.....	..	1		
“ “ “ Nova Scotia.....	..	1		
“ “ “ New Brunswick....	..	1		
“ “ “ England.....	..	1		
“ “ “ Ireland.....	..	1	99	174
<i>(b) Professional Certificates.</i>				
1st Class professional certificates.....	21	..		
2nd “ “ “ .....	57	..		
3rd “ “ “ .....	22	..	100	100
<i>* (c) Provisional Certificates.</i>				
	53	..	53	53
<b>II. Non-professional certificates.</b>				
1st Class to N. W. T. candidates .....	9	..		
2nd “ “ “ .....	43	..		
3rd “ “ “ .....	36	..	88	
1st Class, passed equivalent examinations.....	..	15		
2nd “ “ “ “ .....	..	40		
3rd “ “ “ “ .....	..	1	56	144
<b>III. Certificates to students at law.</b>				
	1	1	2	2
Totals.....	343	183	526	526

Note.—Interim certificates are granted to teachers who complete a course of training at the Regina Normal School or who present approved professional certificates from the Eastern Provinces or elsewhere.

Professional certificates are granted to teachers who have taken Normal training and who have taught successfully in the Territories for at least one year on their interim certificates.

\*Including temporary certificates to substitutes for teachers who were ill or who were required to attend Normal School.

## 12.—EXAMINATIONS.

*Table I—Public School Leaving Examination.*

Number of candidates who wrote in 1900.....	208
“ “ who passed in 1900.....	82
“ “ who wrote in 1901.....	274
“ “ who passed in 1901.....	139

*Table II (a)—Teachers' Non-Professional Examination.*

Where held.	1900 No. of candidates			1901 No. of candidates		
	1st class	2nd class	3rd class	1st class	2nd class	3rd class
Regina.....	9	18	6	6	8	6
“ (For law matriculation)....	..	..	..	..	1	..
Moose Jaw.....	2	1	12	1	5	5
Medicine Hat.....	..	..	..	..	2	4
Maple Creek.....	..	..	3	..	..	..
Calgary.....	..	5	3	..	10	4
“ (For law matriculation)....	..	..	..	..	2	..
Lethbridge.....	..	4	5	1	1	5
Red Deer.....	..	2	3	..	..	..
Lacombe.....	..	..	..	..	1	2
Strathcona.....	6	15	9	2	11	17
Prince Albert.....	..	7	11	..	5	3
Saskatoon.....	..	..	..	..	2	2
Battleford.....	..	..	3	..	..	1
Oxbow.....	..	3	5	2	..	4
Indian Head.....	..	6	12	..	6	9
Moosomin.....	..	11	5	..	11	7
Yorkton.....	..	2	1	..	1	8
Totals.....	17	74	78	12	66	77
Totals.....			169			155

*Table II (b)—Teachers' Non-Professional Examination.*

1900						1901					
Examined			Passed			Examined			Passed		
1st	2nd	3rd	1st	2nd	3rd	1st	2nd	3rd	1st	2nd	3rd
17	74	78	6	32	38	12	65	77	10	50*	45†
Totals.....169			.....76			.....154			.....105		

\*Includes one candidate who obtained 2nd class standing on results of 1st class examination.

†Includes six candidates who obtained 3rd class standing on results of 2nd class examination.

Note.—Of the candidates who passed in 1901 one first class, seven second class and five third class candidates were under age.

*Table III—Teachers' Professional Examination.*

1900						1901					
Examined			Passed			Examined			Passed		
1st	2nd	3rd	1st	2nd	3rd	1st	2nd	3rd	1st	2nd	3rd
21	70	11	19	53	10	30	76	20	29	69	17
Totals.....102			.....82			.....126			.....115		

## 13.—INSTITUTES and Conventions.

Name of Teachers' Association	Place of meeting	When held	Teachers in attendance
North Eastern Assiniboia..	Saltcoats.....	Sept. 26.....	15
Eastern Assiniboia.....	Wapella.....	Sept. 12 and 13	40
Central Assiniboia.....	Wolseley.....	Sept. 19 and 20	49
Saskatchewan.....	Prince Albert...	May 23.....	23
Central Alberta.....	Calgary.....	Sept. 26 and 27	27
Red Deer.....	Red Deer.....	Oct. 24 and 25	24
Edmonton District.....	Edmonton.....	Oct. 14 and 15	82
Total attendance			260



## 14.—NORMAL Schools.

Held at Regina for training of 1st and 2nd class teachers.				Held at Regina and other points for training 3rd class teachers.	
No. of students attending. Class of certificate.				No. of students attending.	
Year	1st	2nd	Total	—	Totals
1893	18	35	53	9	62
1894	5	22	27	37	64
1895	9	13	22	18	40
1896	7	16	23	15	38
1897	12	37	49	38	87
1898	23	36	59	35	94
1899	18	58	76	25	101
1900	18	67	85	10	95
1901	25	73	98	18	116
Totals	135	357	492	205	697
Trained at Normal sessions held previous to 1893.....					55
Attending 3rd class session of 1901-02.....					19
Total.....					771

15.—INSPECTION of Schools.

Inspector	Jurisdiction	No. of districts in jurisdiction	No. of schools in operation	No. of schools visited once	No. of schools visited twice	Total* No. of visits	Distance travelled		
							By rail	By road	Total
John Hewgill.....	Assiniboia East and South-east.....	139	132	127	34	161	189	2,354	2,543
Wm. Rothwell.....	Assiniboia (Central) and Saskatchewan.....	135	125	108	57	165	1,148	2,453	3,601
T. E. Perrett.....	Assiniboia East and North-East.....	112	100	97	66	163	284	3,554	3,838
D. P. McColl.....	Alberta (South) and Assiniboia (West)...	147	137	124	37	161	2,492	2,078	4,570
A. M. Fenwick.....	Assiniboia (Central)...	65	70	67	20	87	1,383	984	2,367
G. J. Bryan.....	Alberta (North).....	133	118	105	57	162	244	2,295	2,539
	Totals.....	731	682	628	271	899	5,740	13,718	19,458

\* Every room in charge of a teacher is classed as a school in these columns.

## 16.—SUMMARY of School Statistics 1886–1891.

Year	Schools in operation	Pupils enrolled	Teachers employed	Total grants paid to schools
1886	76	2,553	84	\$ 8,908 72
1887	111	3,144	125	36,897 47
1888	131	3,453	150	44,547 06
1889	164	4,574	183	56,984 63
1890	195	5,398	224	85,002 55
1891	213	5,652	248	129,042 01
1892	249	6,170	295	121,056 94
1893	262	8,214	307	106,576 59
1894	300	10,721	353	113,999 85
1895	341	11,972	401	112,182 90
1896	366	12,796	433	126,218 21
1897	394	14,576	457	121,457 18
1898	426	16,754	483	133,642 79
1899	454	18,801	545	142,455 89
1900	492	20,343	592	168,322 03
1901	564	23,837	682	162,215 07

## GENERAL REMARKS.

## DEPARTMENT OF EDUCATION.

The year 1901 marks a new epoch in the history of the administration of the public school system of the Territories. When the first School Ordinance was passed in 1884 the management of our school affairs was vested in a Board of Education appointed by the Lieutenant Governor in Council. This board continued to hold office until December 31, 1892, when it was replaced by the Council of Public Instruction consisting of the members of the Executive Committee and four persons appointed by the Lieutenant Governor in Council. On September first last, by virtue of the legislation passed at the last session of the Assembly, the Council of Public Instruction ceased to exist, and the control of all matters pertaining to schools and school districts was handed over to the Department of Education.

In its organisation the Department of Education resembles the other departments of the Territorial government. It has been constituted a distinct and separate branch of the public service and is presided over by one of the members of the Executive Council.

## GENERAL PROGRESS.

During the year ending December 31, 1901, the progress made along educational lines in the Territories has been more than usually satisfactory. In every part of the country the keenest interest has been shown in the establishment and maintenance of public schools. As may be seen from the statistical tables accompanying this report, the material advancement that has taken place is most gratifying. The reports

received from our inspectors also indicate that the schools which have been in operation have succeeded in attaining a comparatively high standard of efficiency. That there is a constantly growing healthy sentiment in favour of the best results that our educational system can be made to secure is everywhere manifest. The people have been liberal in their financial support: new and better school buildings are being erected; greater attention is being given to the equipment of schools, and the care and arrangement of school grounds; school libraries are being provided; and trustees continue to demand the very best teachers that can be secured.

#### NEW SCHOOL DISTRICTS.

That the past year has been a "growing time" for the West is amply demonstrated by the very marked increase in the number of school districts organised. The records for 1901 show that no less than 83 new districts were gazetted. This by far exceeds the number established in any previous year, being some 34 more than were formed during 1900. The majority of the new districts proclaimed are in Alberta. The numbers for the three provisional districts constituting the Territories are—Alberta 47, Assiniboia 30, and Saskatchewan 6. That the year 1902 will witness a still greater activity in the erection of districts may be expected. The records on file in the Department show that during the first three months of the year no less than 102 petitions—48 of which were carried forward from the preceding year—have been considered. Of the petitions so far dealt with 8 have been abandoned or defeated, 33 have resulted in the formation of districts, and 61 are now pending, the initiatory steps having been taken.

#### SCHOOLS IN OPERATION.

While the number of new districts organised indicates to some extent the growth and spread of our educational institutions, such growth is best shown by the number of new schools brought into operation. As will be seen by referring to Table I in the statistics, there were, at the close of the year, 713 districts in existence. Of these, 564 had schools in actual operation, being an increase of 72 over the previous year. In addition to these it should be noted that some 17 new departments were opened in town and village districts, making in all a total of 89 new districts entitled to government aid. These figures clearly show that while the number of school districts is multiplying rapidly, every effort is put forth to bring them into operation with as little delay as possible.

#### ATTENDANCE OF PUPILS.

The number of children enrolled in our public schools was 23,837, an increase of 3,494 over the preceding year, and an increase of 5,036 over the enrolments of 1900. Of the number enrolled 10,060 were in town and village districts, and 13,377 in rural districts.

The average daily attendance for all schools was 11,968. Of the average attendance 5,359 were in town and village districts and 6,609 in rural districts. From these figures it will be seen that the average attendance of pupils for all schools during the time they were in

operation was about 50 per cent. of the total enrolment, while for rural districts and town and village districts the percentages were respectively 48 and 53.

#### LENGTH OF SCHOOL YEAR.

The average number of days for which all schools were taught was 162 days, or 6 days less than for the year 1900. This decrease was probably due to the following causes: First, many new schools were brought into operation late in the year; second, the prevalence of epidemics of contagious diseases. In rural districts the average length of the school year was found to be 157 $\frac{3}{4}$  days, while for town and village districts it was 206 days.

The total aggregate days' attendance for the 23,837 pupils registered was 2,118,670. These figures represent on an average 89 days schooling for each child enrolled in our schools.

#### CLASSIFICATION OF PUPILS.

Under the present regulations of the Department our course of studies is planned for eight standards or grades. The first five of these are commonly known as the public school standards, while the remaining three, viz., VI, VII and VIII, cover the work for third, second and first class certificates respectively. Bearing this in mind, the classification statistics (Table 5) will be found both interesting and instructive. By referring to this table it will be noted that 97.85 per cent. of the pupils enrolled in our schools are in the public school standards, while only 2.15 per cent. are in the higher standards. Of the pupils enrolled in the public school standards no less than 82.7 per cent. are in the first three, which correspond to the classes using the first, second and third readers.

#### TEACHERS.

There were employed in our schools during the year 762 teachers. Of these 708 held either first, second or third class certificates issued by the Department. The number of permits or provisional certificates granted was 53, an increase of 18 over 1900. Under the regulations of the Department permits are granted only upon the application of boards of trustees that have failed to secure a qualified teacher after making an effort to do so. They are never issued in the interests of persons who are seeking employment as teachers.

As an indication of the standing of the teachers of the Territories it may be pointed out that of the total number employed 93 per cent. held either first, second or third class certificates, and were trained at some recognised normal school. In round numbers 23 per cent. of the teachers engaged held first class certificates, 63 per cent. second class, 7 per cent. third class, and 7 per cent. provisional certificates.

The amount paid for teachers salaries was \$274,040.43 an increase of \$39,064.29 over the previous year. The average monthly salary paid was \$45.00, an increase of \$0.61 over 1900. Among the school statistics will be found a table (Table 6) showing the highest and lowest average salaries paid to male and female teachers by the different classes of schools. The appendix to the report also contains a statement showing the salaries paid to the principals of town districts.

Owing to the very marked increase in the number of new schools that are being opened, boards of trustees find it exceedingly difficult at times to secure qualified teachers. This is especially true of those districts that lie remote from railways. As has already been pointed out, the Department last year found it necessary to grant licenses to a number of persons who were not entitled to certificates under our regulations. Had this not been done many of our schools would have remained closed. So far as the supply of teachers for 1902 is concerned, the outlook is not encouraging. Although some hundred students attended the last session of the Regina Normal School they have all, so far as can be ascertained, accepted positions. From correspondence which the Department has had with trustee boards and with the teachers' employment agencies operating in the Territories, it would appear that the demand for teachers during the first term of 1902 will far exceed the supply. At present it may be said there are no unemployed teachers in the West, so that unless eastern teachers can be secured it will again be necessary to grant temporary certificates to persons who have had some experience in teaching, or whose scholarship would warrant the Department in granting them permission to take charge of a school.

#### SCHOOL HOUSES AND EQUIPMENT.

Early in the year special instructions were issued to inspectors to keep a careful record of the schools in their inspectorates under the following heads: (1) Class of School Buildings, (2) Equipment, (3) Libraries, (4) Tree Planting. Table 7 in the statistics contain the figures, which have been compiled from their reports. As this information has not been called for in previous years it is impossible to make any definite statement respecting the improvements which may have taken place during the year under the heads mentioned. It may be stated generally, however, that the inspectors report that increased attention is being given to the construction and equipment of school buildings and the care of school grounds.

By referring to the table above mentioned it will be noted that of the 563 buildings reported upon, no less than 143 or 25 per cent. are constructed of logs. This class of building is usually erected in outlying districts where settlement is sparse and where the erection of a modern frame school house would be a heavy burden on the taxpayers. The log school house, however, is gradually giving way. While they may serve their purpose for a few years, they are found to be very unsatisfactory for the following reasons: (1) It is very difficult to keep them in a proper state of repair; (2) in their construction provision is rarely made for a sufficient number of windows to properly light the school room; (3) as they are originally intended to be used for a few years at most little effort is made to improve their appearance, and in too many instances they are allowed to get into a dilapidated condition; (4) they cannot be moved except at considerable cost.

In the last report of the Council of Public Instruction it was pointed out that the majority of the school houses erected in the Territories had been planned and constructed regardless of sanitary and hygienic conditions. The chief defects noted by the inspectors are in connection with the lighting and ventilation of school rooms. Of the 563 buildings inspected during the year only 92 were found to be provided with a

satisfactory system of ventilation. All others had to depend upon doors and windows for carrying off foul air and for supplying the fresh air required. In the case of crowded school rooms the effects of bad ventilation are disastrous. The pupils become sleepy and listless, they are afflicted with headaches and dizziness, and eventually their general health may be seriously impaired. It can well be imagined that under these conditions it is utterly impossible for pupils to give close attention to their studies. The remedy is obvious. The health of the children as well as the general efficiency of our schools demand that the earliest opportunity should be taken to provide every school with a proper system of ventilation.

As regards the equipment of our schools, the returns received indicate that school officials have recognised the value and importance of providing their teachers with the essential requirements. A summary of the inspectors' reports shows that only some 80 schools are furnished with unsatisfactory desks, while 109 are insufficiently supplied with black board space. The number of maps, globes, etc., which have been provided will be found in the tabulated statement on page 12. By referring to this table it will be seen that the majority of our schools have been fairly well provided with the apparatus most required for the proper instruction of pupils. In all cases in which schools are found to be insufficiently equipped the inspectors, through the medium of their reports, direct the attention of trustees to the requirements. It is also the intention of the Department at an early date to furnish each district with a printed list of the equipment and apparatus needed for each of the first five standards. Heretofore this information has not been supplied in this form and as a consequence trustees have not only experienced some difficulty in making a suitable selection of apparatus but have also in a number of instances expended school moneys unnecessarily.

#### SCHOOL LIBRARIES.

For a number of years past there has been more or less agitation throughout the Territories in favour of the establishment of school libraries. The question has been repeatedly discussed at teachers' conventions, and numerous requests and resolutions bearing on the subject have from time to time been received by the Department. Those of our teachers who have been alive to the importance of having a small library of books suitable for school children have endeavoured in every possible way to induce trustees to supply this much felt want. That their efforts have been crowned with some success is evidenced by the fact that the inspectors report that 105 districts have provided libraries containing some 4,229 volumes. These figures, however, while satisfactory in themselves, clearly indicate that the great majority of trustee boards have been very slow in moving in the matter and that if the purchase of libraries were left optional our schools generally would probably never be supplied.

When the school legislation of the last session of the Assembly was being prepared it was thought advisable to embody in The School Grants Ordinance provision whereby it would be compulsory on the part of all districts to expend a small sum annually for the purchase of books. Section 9 of the Ordinance reads as follows: "The board of every district receiving a grant under clause 3 of section 3 hereof shall expend one half

of the amount of such grant received in each and every year on the purchase of books for a school library and such books shall be selected from a list authorised and furnished by the Department." As The School Grants Ordinance came into force in January, 1902, it is now necessary for every district earning a grant on the basis of inspection to spend 50 per cent. of the amount received for library books. It may therefore be confidently expected that within a few years practically every district in the Territories will possess at least the nucleus of a library consisting of well selected standard works suitable for children of all ages attending school.

To give some idea of what will be accomplished towards this end during the year it need only be pointed out that 275 school districts will shortly receive \$5,154.93, being the amount earned on the basis of the inspectors' reports for 1901. Under the provisions of the section above referred to one half of this sum, or \$2,577.46, will be expended in providing libraries.

#### INSPECTION OF SCHOOLS.

The importance of providing for the proper inspection of schools is universally recognised. In every county, province and state where a public school system has been established provision of some sort or other has been made for governmental supervision. In the Territories the matter was taken in hand soon after the first school district was organised in 1884. At first persons were temporarily employed to spend a few weeks or months during the year in visiting schools. As the number of school districts increased it was found that these persons were unable to devote the necessary time and attention to the work and it was finally decided to appoint permanent inspectors who would be expected to give their undivided time to the performance of their duties. At present the number of inspectors engaged in supervising the work of our schools is six, one of whom is also acting as assistant teacher in the Regina Normal School.

As the Superintendent of Education in his report to the Chairman of the Council of Public Instruction in 1896 (page 18) dwelt somewhat fully upon the duties which our inspectors are called upon to perform it is unnecessary to again refer to the matter at this time. It may be of interest, however, to those who desire definite information on the subject to show in brief form the number of inspections which were made during the year. Table 15 has been prepared with this object in view. It will be seen by referring to it that of the 682 schools in operation 628 were inspected once, and 271 twice, during the year, and that the total number of rooms inspected (including second inspection) was 899. The schools not inspected were either closed at the time of the inspector's visit or were opened for the first time after he had inspected the other schools in their neighbourhood.

#### RECEIPTS AND EXPENDITURES.

The total revenue for all districts for the year was \$620,562.76, being an increase of \$130,995.82 over the preceding year. The chief sources of revenue were: Taxes, \$243,146.27; school grants, \$163,843.22; sale of debentures, \$88,835.82; borrowed by note, \$77,550.33; school fees, \$1,833.44.



The total expenditure of all districts was \$548,809.28, or \$92,953.90 more than was expended in 1900. The principal items of expenditure were: Teachers' salaries, \$274,040.43; school buildings and repairs, \$86,810.75; furniture, apparatus and equipment, \$16,401.33; officials' salaries, \$14,570.24.

#### ASSETS AND LIABILITIES.

The total assets of all districts have been returned as \$917,766.76, while the liabilities are placed at \$436,307.87. The estimated value of school grounds and buildings is \$559,991.73, furniture and apparatus \$80,082.71, school libraries \$4,722.19. The total arrears of taxes which were due December 31, 1901, are given as \$98,401.91, of which \$75,068.51 were due to rural districts and \$23,333.40 to town and village districts.

Of the amount due by school districts at the close of the year there was owing to teachers \$43,142.22. The balance of the liabilities is largely made up of school debentures the payment of which had not matured.

#### INSURANCE.

Previous to 1900 the insurance of school buildings was not compulsory. As a consequence many boards of trustees were extremely careless in the matter of protecting their property against loss or damage by fire. In a number of instances school houses were destroyed that did not carry a dollar of insurance. The loss, as may well be imagined, was severely felt by some of the districts concerned. The provision in the Ordinance making it compulsory on the part of the trustees to insure school property has now been in force two years. That it has been generally observed is shown by the fact that three hundred and ninety-eight districts have reported that their school buildings and contents have been insured. The total amount of insurance carried by these districts is given as \$327,406.66.

#### AUDIT OF SCHOOL ACCOUNTS.

The provision made at the last session of the Legislature for the auditing of school accounts came into force towards the close of the year and, so far as can be ascertained, the appointment of official auditors has met with very general approval. That there was a necessity for having the books and accounts of the school districts audited by some person competent to do so can scarcely be questioned. By referring to Table 9 in the accompanying statistics it will be seen that the amount of money to be accounted for by treasurers of school districts for the year 1901 was no less a sum than \$620,562.76. It would therefore appear but right and proper that every precaution should be taken to see that this large sum of public money had been duly accounted for and that it had been expended in the manner provided by law. In the past the auditing of school accounts by local auditors appointed by ratepayers has been in many instances a mere farce. Our inspectors have repeatedly pointed this out, and from time to time have urged upon the Department the desirability of adopting some such plan as that which has been devised.

To the actual working out of the new plan there has been but very little objection taken by school officials. As a rule they have gladly

accepted the change. In the very few instances in which objections were raised the chief cause for complaint was the distance treasurers were called upon to travel in order to place their books in the hands of an official auditor. As, however, the regulations adopted do not require that a treasurer should be present at the time his accounts are being audited this complaint was not well founded. Owing to the fact that there are very few localities in the Territories that are not provided with postal or express communication with the centres where official auditors chiefly reside, there should have been but very little delay or expense in having the books and accounts of outlying districts transmitted to one of the auditors appointed.

What appears to have been a more serious complaint, and one that in some instances may have been well grounded, was the inability of treasurers to have their accounts examined within a reasonable time after they had taken them to an auditor. This was due principally to the fact that at some centres too few auditors were appointed. This, however, is a matter that can be easily remedied in future. When it is remembered that the school fiscal year closes December 31 and that the auditor's report is required to be produced at the annual school meeting which must be held during the first fifteen days of January, it will be readily seen that there is an urgent necessity for appointing a sufficient number of auditors to enable them to report upon all books submitted for examination before the date of the ratepayers' annual meeting.

As official auditors are required to forward copies of their reports to the Department there has been ample opportunity of forming an opinion respecting the nature and usefulness of the work they have accomplished. It need only be stated that never before in the history of the Department have the financial returns of school districts been so clear and accurate. The number of returns that have had to be sent back for correction or explanation were exceedingly few as compared with previous years. The reports also indicate that many of the auditors have endeavoured to instruct treasurers as to the best methods of keeping their accounts. In future it might be as well to make this one of the duties of all auditors with a view to securing greater uniformity and simplicity in recording the receipts and expenditures of school districts.

#### GRANTS TO SCHOOL DISTRICTS.

The total amount paid by the Treasury Department in support of the public schools of the Territories for the year 1901 was \$162,215.07, a decrease of \$6,106.96 over the previous year. Of this sum the grants payable to all districts under the provisions of clauses (a), (b) and (c) of Section 116 of The School Ordinance of 1898 amounted to \$151,013.41; \$5,523.53 was paid to districts on the basis of inspection [clause (d)]; \$4,269.22 was paid to unorganised districts and to schools that had not succeeded in securing the minimum average attendance of pupils; and \$1,408.91 to districts whose schools had been closed on account of epidemics of contagious diseases.

While the above figures represent the grants *paid* during the last fiscal year they do not represent the grants *earned*. The returns received by the Department from the five hundred and sixty-four schools which were in operation show that during the year these schools

(representing six hundred and eighty-two grant earning departments) actually earned \$185,721.56. From these figures it may be readily ascertained that the average grant earned by the six hundred and eighty-two rooms for which teachers were employed was \$272.72 and that the daily average grant earned by all rooms for an average school year of one hundred and sixty-two days was \$1.68.

As the grants to which many districts are entitled do not fall due until December 31, it has always been necessary to provide for their payment in the fiscal year following. During the first three months of the current year no less a sum than \$64,550.10 has been paid on account of grants earned in 1901. The payment of the greater portion of this amount, which was due to districts that had maintained yearly schools, was necessarily deferred on account of the delay in forwarding the the returns upon which the grants are calculated. As a rule these returns are not received by the Department until after January first.

As The School Grants Ordinance passed at the last session of the Legislative Assembly came into force at the beginning of the year a word or two with reference to the principles that underlie the new basis of paying grants may not be out of place. In the case of rural districts the grants payable are based upon: (1) the amount of assessable land in the district, (2) the length of time school is kept open, (3) the class of certificate held by the teacher, (4) the regularity of attendance, (5) inspection. These will be considered briefly in the order stated.

The greater portion of the grant which may be earned by a rural district is determined by the number of acres of assessable land it contains. Hitherto every district in the Territories has been paid a flat per diem grant for each day its school was open. In recent years this system has operated to the disadvantage of small districts and districts that were sparsely settled. From statistics gathered by the Department in 1900 and 1901 it was found that the tax levied to maintain schools in rural districts varied as much as from less than one cent to ten cents per acre. This was felt to be an injustice and the "assessable land" basis has been adopted for the purpose of equalising to some extent at least the burden of taxation. Under this basis every district that comprises within its limits 6,400 acres of assessable land will receive \$1.20 for each day its school is open. In case it contains more than 6,400 acres the grant is gradually decreased (the decrease being in proportion to the excess of assessment) until it reaches 90 cents, the minimum grant payable. Should a district contain less than 6,400 acres the grant payable is gradually increased, the increase also being in direct proportion to the decrease in the assessment. While the adoption of this system will undoubtedly result in curtailing to some extent the grants payable to the older and more densely populated districts, it should be borne in mind that these districts are most capable of undertaking the increased responsibilities they will thus have to assume. On the other hand, the new system will have a tendency in the case of weak struggling districts to maintain grants where they have been in the past, and in this way the cost to the settlers of maintaining a school will be more equitable than it has been during recent years.

As the general efficiency of our educational system depends very largely upon the number of days our schools are in operation it was thought advisable to embody in The School Grants Ordinance some provision that would tend to encourage trustees to engage teachers for

longer periods. This has been done by offering a bonus or additional grant of 40 cents per day to every rural district that maintains a school for more than 160 days during the year. Whether this provision will have the desired effect or not cannot at present be stated, but that there was a necessity for holding out some inducement was shown by the fact that of the five hundred and five rural districts in operation last year no less than two hundred and nineteen were open less than one hundred and fifty days while the average length of the school year for all rural schools was only one hundred and fifty-seven and three-quarter days.

To every district that engages a teacher holding a first class certificate a special grant of ten cents per diem will be paid. The object of this grant is to ensure to teachers holding the highest grade of certificate a salary somewhat in proportion to their standing. As many boards of trustees hold a very erroneous view that *any* teacher is "good enough" to conduct and manage a small country school it is very doubtful if teachers possessing the superior scholarship and training represented by a first class certificate would be engaged by trustees of rural districts unless some such inducement were held out. On the other hand it may be assumed that few teachers would undertake the trouble and expense of securing the higher grade of certificate unless they were reasonably assured that their services would command better salaries. As under the old system of paying grants a special grant of ten cents per day was paid to those districts that engaged a teacher with a first instead of a second class certificate it may be interesting to know what the effect on salaries has been. During the year 1901 the average monthly salary paid to teachers holding first class certificates was \$53.14, while that paid to teachers holding second class certificates was \$43.36. It will therefore be seen that the purpose for which this special grant is intended has been accomplished.

Subclause (d) of clause 1 of section 3 of The School Grants Ordinance introduces an entirely new principle in our system of paying grants. It provides for the payment of a sum (varying from 5 cents to 25 cents per day) which is dependent upon the regularity of the pupils' attendance. As the average attendance of pupils enrolled in our schools has been in the past about 50 per cent. of the total number registered it was thought that a better attendance might be secured by paying to districts a grant based on the percentage of attendance instead of on the average attendance as heretofore. Under this clause a school having twenty pupils enrolled is entitled to as large a grant as one having fifty, provided the twenty pupils attend school as regularly as the fifty. As the maximum annual grant which a yearly school may earn under this heading amounts to \$52.50 it is to be expected that an earnest effort will be put forth by trustees, ratepayers and teachers to induce parents to send their children to school as regularly as possible.

As for a number of years past the government has been paying a grant on the basis of inspection it is unnecessary to refer at length to this provision of The School Grants Ordinance. Those who have made a study of the subject are doubtless familiar with the advantages that follow from the adoption of the principle of "payment on results." While in the Territories only a very small portion of the total grant which a district may earn is based upon the inspector's grading of a school, there is no question but that the possibility of earning even this small amount has had a marked tendency not only to encourage trustees

to take a greater interest in their schools and school premises but also to impel teachers to do the very best work of which they are capable.

#### CONSOLIDATION OF SCHOOLS.

The improvement of rural school conditions is probably the most important topic that is receiving the consideration of educationists to-day. That the small country school, with its very limited attendance, its multiplicity of classes and inadequate equipment, possesses but little educative value can scarcely be questioned. A school without children is almost invariably a poor school. It is characterised by an absence of the inspiration that always comes from numbers as well as the encouragement found in companionship. A school with less than ten children cannot be expected to stimulate a boy or girl to do the best work possible. With only one or two pupils in a class there is wanting that incitement of emulation or competition which calls forth all the powers of the child. Besides it may be noted that any form of organisation with its accompanying advantages is practically impossible.

That the problem of the small school is a real one was recognised in the Territories some six years ago, when provision was made in The School Ordinance for the consolidation of schools and the transportation of children. It was hoped, as a result of the legislation then passed, that many weak districts would be induced to unite and that the pupils by means of conveyance would be gathered in larger groups. As, however, the adoption of this plan means the abandonment of the traditional home school, trustees and parents have been very slow in moving in the matter. When the school legislation of the last session of the Assembly was being drafted the question of consolidation again came up for consideration with the result that the previous provisions of the Ordinance were modified in such a manner as to hold out still greater inducements in favour of centralisation. To show the necessity for this it need only be pointed out that of the five hundred and five rural districts in operation last year one hundred and seventy had an average attendance of less than ten pupils, and one hundred and eighty-one an average of from ten to fifteen.

In an appendix to this report will be found a statement setting forth: (1) The conditions under which boards of trustees are now authorised to enter into an agreement for the union of their schools; (2) the assistance which the Government will give in all cases where the system of transportation is adopted.

#### EDUCATION OF DEAF MUTES.

The agreement entered into on July 1, 1899, by the Government of the North-West Territories with the Government of Manitoba for the education of our deaf mutes does not expire until July 1, 1904. Since the arrangement was first made there have been in attendance at the Manitoba Institution fifteen pupils from the Territories. During the past year the number in attendance was thirteen and the total cost of providing for their education and maintenance was \$3,414.80.

The third annual report of the Principal of the Manitoba Deaf and Dumb Institution will be found in Appendix "A." In his report Mr.

McDermid outlines the aims of the institution, and he calls attention to the excellent provisions which have been made for the education, health and comfort of the pupils placed under his care.

I have the honour to be, Sir,

Your obedient servant,

J. A. CALDER,

*Deputy Commissioner of Education.*

## GENERAL REPORT

FOR THE YEAR 1901.

By D. J. GOGGIN, M.A., D.C.L., Superintendent of Education.

F. W. G. HAULTAIN, Esq.,  
*Commissioner of Education.*

SIR,—I have the honour to submit for your consideration this general report on the work of the past year.

## READING.

Generally thought reading is done creditably, oral reading poorly. Inspector Perrett reports that reading "varies with the teachers. There are teachers whose work in word recognition and word meaning is admirable; others whose pupils can give an intelligent interpretation of the selections studied; a few whose pupils read with imitated inflections and expression, and there are those—and their number is increasing—whose pupils read with expression that reveals a sympathetic appreciation of the spirit of the author."

Inspector McColl reports "very good work being done, the primary reading being especially satisfactory. Too often in senior standards oral reading does not receive the attention it deserves."

Inspector Bryan reports: "Thought reading is fairly well done but oral reading is not satisfactory. Too many teachers are themselves unable to read well."

This defect may be remedied by stricter inspection and by thorough preparation and rigid testing of candidates at academic and professional examinations. It is not too much to ask that pupils at the close of their school course should read with fluency, ease and just expression any piece of literature with the substance of which they are familiar.

In primary classes increased attention is given to the content of the reading lessons, as it is in this the child's interest centres. This content must be about what he is most interested in at home and in the world about his home—in children, in living animals and plants, in men. He willingly puts forth the effort to master language forms because he perceives that through these he can get at the content which interests him.

So it has come about that his observations of plants and animals in nature study, the occupations and actions of children and men in story and myth, in prose and verse, form the content of his reading lesson on the blackboard at one period of the day. Under the stimulus of suitable questions he expresses his opinions on this content and his interest is two-fold—the desire to get thought through written or printed forms, and the desire to express this thought. At another period of the day he is drilled on the forms of language—the mechanics of reading. Here phonics, word-method and the various devices for learning word, phrase and sentence forms, together with drills on the correct utterance of

vowels and consonants, have their place. Our first primer, which is a drill book rather than a reading book, has its special use in such lessons.

When the ordinary language forms have been mastered, when the child reads with comparative ease in the Second book, the reading lessons should henceforth be of two types, the intensive and the extensive.

The world's masterpieces of poetry and prose deserve and demand the closest study. To get their content they must be read line by line, the relation of the subordinate thoughts to central thought must be grasped in each paragraph, in each chapter, if the pupil is to seize the great truth of the book and see it as "a powerful application of ideas to life." This intensive reading develops power. It begins with the simple story in the first year when the child is led to get its ethical content and grows year by year till the pupil attacks with confidence a masterpiece of Shakespeare, Tennyson or Browning. It is not an easy, though a necessary task to lead pupils to read deliberately, minutely, lingeringly and reflectively a great play or poem, but one can hardly speak too highly of the effect of this intensive reading upon the sum of a pupil's ideas, the logical character of his thought and the enrichment of his vocabulary.

A different kind of power is called for in reading the lighter fiction, the popular magazine article, the sketch of current events in a newspaper. These are read rapidly and in a broad way. The power to grasp quickly and hold the more important ideas till the conclusion is reached is what is required. There is no attempt to "study" the selection. Such reading is for information or pleasure rather than "power." Books or articles of this class are, in Bacon's phrase, to be "tasted," perhaps "swallowed," but not "to be chewed and digested." When a pupil reads several paragraphs or a chapter and gives the substance in his own words, when one pupil reads aloud and the others give the substance, or when all the pupils are given so many minutes to read some new matter and then, with books closed, to give independently the substance of what they have read the exercise is one of extensive reading.

In our Third Reader such selections as *The Village Blacksmith*, *The May Queen*, *To a Waterfowl*, *The Brook*, *The Little Match Girl*, should be read intensively. Such selections as *The Beaver*, *The Farmer and the Fox*, *Prince Arthur*, *Golden Deeds*, *Farmer John*, are suitable for extensive reading.

Too many teachers, in a laudable effort to have pupils master the thought of the reading lesson, have neglected the art of oral reading. It is important that a pupil shall be able to read with correct pronunciation, clear articulation, suitable phrasing, and ease to himself, a story, a poem or an article from a newspaper or magazine in such tones as will reveal emotion as well as thought and give pleasure to his hearers. Since the art of oral reading is evidently not receiving sufficient attention it seems expedient to institute tests in this subject at the non-professional examinations, devote more time to it in the Normal School, and make it a more important factor than hitherto in obtaining the inspection grant.

There is a related phase of reading which is receiving less attention than it deserves. Every teacher who can read should read aloud to his classes frequently. He may in this way open the world of books, beget the desire to read, foster a love for good literature, furnish ideals in style of reading, and add much to the social life of the school.



Children in primary classes can understand much that they have not the power to make out from the printed page. Whether the teacher reads from "Black Beauty" or "Beautiful Joe" to inculcate kindness to animals, from Olive Thorn Miller's "The First Book of Birds," to lead them to perceive the use and beauty of bird life, from Lovejoy's "Nature in Verse" to see Nature through the poet's eyes, from "The Seven Little Sisters" and "The Ten Little Boys" to interest them in geography and history, from the writings of Longfellow, Whittier, Tennyson, Hans Anderson, Hawthorne, Dickens and other masters, those selections that appeal powerfully and sanely to child life, is he not truly teaching reading? With senior pupils the choicest things from the world's best literature may be read together and talked over till each becomes to them "a thing of beauty and a joy forever." It is then but a step from the reading to the author and the library.

#### LIBRARIES.

In many respects the most helpful work done for our schools in years was the passing of the library clause in The School Ordinance at last session of the Legislative Assembly. Under it every school must establish a library and devote at least half the inspection grant each year to the purchase of books. The list of books from which selections must be made is prepared under the direction of the Department of Education and includes reference books in each subject of instruction as well as books of general literature. Educators throughout the Dominion are congratulating us on this advanced legislation.

#### LITERATURE.

The subexaminers make the following report on the character of the work done in the higher standards, as revealed by the examinations at midsummer. "The candidates' knowledge of the prescribed literature is exact but their poetic appreciation is low. The extent of the reading of a pupil in the Sixth Standard is too limited to admit of a recognition of what is best in literature. The relation between the form and content of poetry is not well understood. Careful teaching has been done in the mechanics of language; but reasoning power, as shown in the ability to reproduce the author's sequence of thought, is only fair. In Standard Seven, the significance of words, phrases, etc., when these are taken by themselves, is pretty clearly apprehended; but their relations, and the purpose of their introduction, are not so well understood. The mechanical side of poetry these pupils know quite intimately; but the spirit of it, as distinguished from that of prose, seems somewhat beyond them at this age. In prose literature (the novel) the candidate's acquaintance with the narrative is close and careful and his ability to reproduce is fairly satisfactory. But he lacks a clear conception of the purpose and plan of the story, and the relation of these to characters and events."

#### WRITING.

Inspector Rothwell, in discussing correlation of studies, speaks of writing thus: "Fifteen or twenty minutes daily are spent in writing from headlines. The pupils' performances may be creditable. During

the rest of the day writing is not attended to, the pupils do not put forth their best effort, the benefit of the writing lesson is lost in the scribbling that goes on."

Inspector Perrett thinks that sufficient direct instruction and general supervision is not given to writing.

Inspector McColl says: "A creditable improvement is noticeable in the pupils' copy books and exercise books. Neatness and tidiness are mainly the results of the teachers' daily supervision."

Writing is mainly a mechanical accomplishment. Practically, every pupil can be taught to write a clear legible hand and it is ordinarily his teacher's fault when he fails to do so. Each year in the Normal School are to be found students from nearly every province in the Dominion, yet it is safe to say that half the number write a hand that a business man would not tolerate in his ledger. Many a student is surprised when he is informed that his slovenly exercise, in an almost illegible scrawl, is a disgrace to himself and an insult to his instructor.

The remarks of Dr. Stewart, His Majesty's Chief Inspector of Schools in the Southern Division of Scotland, are so applicable to our conditions that I do not hesitate to quote them: "I attach the highest importance to the proper teaching of this branch. A fair, free hand is bound to produce a favourable impression, and whether there be any truth in the connection between character and writing or not, there can be no doubt that employers of apprentices think so. While the writing of the elementary school is beautifully formed in the lower classes, it is a common experience to find that it degenerates farther on, especially in notebooks, into a careless scribble. Again and again in our secondary schools I have urged that more attention should be given to this subject. The writing master presents copybooks containing marvels of beautiful script. The class masters show exercise books where the writing is slovenly in the extreme. The writing master has nothing to do with the exercise books and the class masters say they have nothing to do with the writing. The climax is reached at the university where the professors are only too thankful if the writing is legible or intelligible at all. No doubt the best hand may be ruined by excessive writing, and here there may be some apology; and no doubt students who are most concerned with amount and value of their answers think little of the form; but surely it should be remembered that there is a moral view, and that the man who, but for the extenuation referred to, writes in such a way as to cause the greatest possible trouble to the person who is expected to decipher it, manifests an undesirable amount of inconsiderate disregard for the comfort and convenience of others."

#### SPELLING.

Inspector McColl reports that spelling is receiving more attention and that the teaching of this subject is more systematic and thorough. Inspector Bryan asks for more attention to be given to it. The reports of the subexaminers indicate a decided improvement in the papers submitted at the Public School Leaving and Teachers' nonprofessional examinations.

#### GRAMMAR.

Inspector Bryan reports "a tendency to treat grammar as an isolated subject, and not to connect it with composition and literature,"

Inspector McColl says: "Except in a few schools the pupils are classified one standard too high. In the analysis of easy sentences, and in describing the functions of words and phrases their knowledge was too often vague or inaccurate." Inspector Perrett says: "The teaching of grammar is satisfactory. In nearly all schools the sentence as a means of expression is the basis of the teaching. In some cases I find very little interest taken in grammar chiefly because the junior classes are being drilled in exercises beyond their ability."

The subexaminers, reporting on the Public School Leaving Examination, say: "The candidates' knowledge of grammar as revealed in their answers was generally good. Their spelling was uniformly good and the English very fair. Their arrangement on paper of the subject matter of their answers was very fair."

#### COMPOSITION.

Inspector Bryan thinks that "too little time is spent in the actual teaching of composition. It is not enough to have pupils express the substance of their lessons in literature, history and geography." Inspector Perrett reports: "Teachers are grasping the fact that composition extends beyond a few regular lessons on one form of letter writing, and set essays. The written exercises in all branches of study are receiving considerable attention and in many schools the so-called 'scribblers' resemble well-kept 'exercise books.'" Inspector McColl reports a marked improvement in composition in all standards.

The subexaminers report adversely on much of the work submitted at Public School Leaving. The paraphrasing throughout was poor, and the letter writing unsatisfactory in too many instances. The preparation of outlines for composition and the mechanics of the papers were very fair. "The teaching of composition lacks point. Teachers appear to be at a loss as to how to go about the work of teaching composition." On the senior work the report of the subexaminers is more favourable. "The content of the composition shows clear and definite knowledge, and some ability is manifested in expressing clearly what is known. The descriptive and narrative essays were very creditable, but the reflective one brought to light much weakness in reasoning power. Connected abstract thought seems possible only to more fully developed minds."

Most educators are, in theory, opposed to the use of a text on composition for elementary classes, but in practice the book has advantages. It provides definite graded exercises in matter and language. The pupil who does these exercises eventually arrives somewhere. Without such a book instruction too often lacks purpose and articulation, and fails to produce appreciable results. We evidently need, at the least, a graded syllabus of work indicating in considerable detail suitable subject matter for composition in the lower standards, with exercises in the arrangement of thought. We need a parallel course dealing with the use and choice of words and the construction of sentences and paragraphs. Where possible these courses should be related closely to literature and grammar. Inspector Hewgill says: "To secure better and more systematic teaching of composition a text book upon this subject would be very helpful, particularly if composed of a series of progressive exercises arranged in accordance with the matter suggested in the Programme of Studies."

After a pupil has acquired a certain freedom and fluency in narrating what he has experienced, or describing what he has seen, his modes of expression become a subject for the teacher's consideration. When the subject matter is within the knowledge of the pupil and interests him, he should be required to put his strength into the manner of saying what he knows and wishes to tell. Expression is an art that can be taught. The methods of simple, direct and accurate expression can be presented and learned through practice. Here, the pupil can learn to do by doing and by observing how others have done. A man's speech is a measure of his scholarship and culture. Can the school render a pupil a greater service than teach him "to speak and write the English language with correctness?"

#### HISTORY.

Inspector Bryan is not satisfied with the results especially in the lower standards. He suggests a redistribution of the work and asks for a clear correlation of geography and history. Inspector McColl finds in many schools too close an adherence to the text books. It is not sufficiently realised that while it is the business of the book to narrate it is the duty of the teacher to illustrate, explain and supplement. Inspector Perrett reports that the facts in history are well taught and "with most teachers there is close relation between the history and geography lessons."

The child is interested in story telling before he enters school. By it his constructive imagination has been stimulated and developed. The parent selects the material for his stories from the literature of the Old Testament, from the simpler tales of early Greece, Rome and England, and the child enjoys these if they are well told. In school we take advantage of this interest and begin with biography. Whether it is that we have not selected suitable subjects or that our teachers are not skilled in the art of story telling it is evident that the results, in Standard Two especially, are not, in a number of schools, as satisfactory as they should be.

At the beginning of the course in history the arrangement of subject matter is an educational problem still in process of solution. Shall we begin with world types of men (or boys) in action—types of life and conduct, *e. g.*, the Aryan, Persian, Greek, Roman, Saxon, English, Indian, Canadian, after the manner of Jane Andrews in "The Ten Boys;" to be followed by the biographies of a few great men in English and Canadian history preparatory to reading the prescribed texts? Shall we begin, say a standard higher, with Leonidas and Ancient Greece, Hannibal and the two great nations of his time, Alfred the Great or Early England, Charlemagne or Mediæval Europe, Peter the Hermit and the Crusaders, Wolsey, The Armada or England on the Seas, . . . Columbus and the discovery of America, Cabot and Cartier and early Canadian discovery. . . Lord Selkirk and the Red River settlement, etc., preparatory to the reading of the text books? Shall it be an arrangement with little regard for logical order of material in the lower standards but with great regard for the learner's interest?

If, at the beginning, we thought less of the logical order of our material and more of how it stimulates the child's interest in the past, develops his power to picture incidents, and helps to train him to form simple ethical judgments, our teaching would be more educative in its effects than, in many instances, it now seems to be.

In the higher standards we have texts dealing specifically with the political and constitutional history of England and Canada, but none with economic history. It will readily be admitted that economic forces have been important factors in determining the course of human affairs. Economic history deals with "the physical side of the life of communities and of individuals; it dwells on the practical use and misuse of national resources, and the successes and failures due to financial experiments; and it brings into prominence the fundamental influence in social affairs of the need of food and shelter and the requirements which man feels in common with lower animals." In their ideals and aspirations men differ fundamentally; but the touch of practical necessity makes the whole world kin; the limitations imposed by physical needs are similar for all peoples; the opportunities afforded by natural resources in one age resemble those offered in another, though there is a growth in the power of appreciating and using them. The organs and the methods which human society has developed at different times for dealing with industrial problems are closely analogous.

If, in Standard VII, instead of reading intensively, as now, a period of English history, the student read such a book as Cunningham's *Outlines of English Industrial History*, or Gibbon's *Industrial History of England* he would, through his knowledge of the growth of manors and towns, the industrial life, commercial development and economic policy of England, have new light thrown on his previous reading and gain a knowledge of the relations of labour and capital, of the individual and the state that there is increasing need for his having.

#### GEOGRAPHY.

Inspector Bryan reports that upon the whole the subject is well taught though there is a tendency to introduce scientific minutiae into junior classes where it is out of place and beyond the grasp of pupils. He thinks more attention should be given to map drawing. Inspector McColl says: "That the results in the junior standards is excellent. In the senior standards the main weakness is in the pupils' knowledge of the Dominion of Canada." Inspector Perrett says: "The general work in geography is good and based upon sound principles. The particular work in the geography of the North-West Territories is not so thorough. This is due mainly to the teacher's want of familiarity with the facts. Sufficient use is not made of the appendix to the authorised<sup>1</sup> text, which deals with the geography of the Territories, and of the documents issued by the Department of the Interior." Inspectors Hewgill and Fenwick suggest a revision of the course in geography for Standard III.

The conditions existing in our schools when the present course was framed have changed somewhat and it is advisable to redistribute portions of the work. In the higher Standards, especially Standard VII, it seems necessary to lessen the extent of the work now prescribed, in order to permit of field exercises in physical geography. These, when done in the autumn, furnish the basis of the work in physical geography for the winter months. Field work in the spring will then consist mainly of local illustrations of the classifications studied during the winter. The objective work, which is fairly well done in the junior Standards, is neglected in the senior, to the manifest disadvantage of the students. It is significant that the College Entrance Examination Board

of the Middle States and Maryland in its requirements gives a series of suggested laboratory exercises in physical geography, forty of which must be performed by the candidate, and the result presented in a certified note book at the time of the examination. Much of the work in our Standard VII is included in this entrance examination.

#### ARITHMETIC.

Inspector Bryan reports that "the teaching is objective in character and that the statement of work is fairly neat and logical. Sufficient prominence is not given to rapidity in calculation." Inspector McColl says: "As a rule the pupils are well abreast of the work required by the Programme of Studies but even in senior classes there is lack of accuracy." Inspector Perrett says: "The work is becoming more practical. Much attention is given to a form of solution that clearly expresses the processes of reasoning involved. There is scarcely the time given to rapid mental arithmetic I would like to see." In this Inspector Fenwick concurs. Inspector Rothwell complains that in writing out solutions the rules of grammar, punctuation and composition are neglected. Inspector Hewgill wishes teachers to give closer attention to logical statement of solutions. The subexaminers, in speaking of the Public School Leaving Arithmetic, say: "The language was satisfactory and the statements clearly and concisely expressed. The work was well and neatly arranged."

Some teachers spend much time with beginners over explanations of the processes in subtraction, multiplication and division. A full explanation is impossible at this stage and it is questionable whether any explanation should be offered unless the child asks for it. The mechanical processes in these rules can be learned, and performed accurately and rapidly without such explanations. The period of explanation comes considerably later in the course. If thorough drill in pure number were kept up, even for a few minutes a day through all the standards, there would not be that lack of rapidity and accuracy in calculation that the inspectors refer to.

The loose manner of writing out solutions tolerated by many teachers gives rise to half the mistakes which vitiate pupils' work. Carelessness in form begets carelessness in thought. As illustrations, examine the following from "The Teaching of Elementary Mathematics," by David E. Smith: "To let a child say that  $2 + 3 \times 2$  is 10 (instead of 8) is to sow tares which will grow up and choke the good wheat. To let him see forms like

$$2\text{ft.} \times 3\text{ft.} = 6 \text{ sq. ft.}$$

$$45^\circ \div 15 = 3\text{hrs.}$$

$$\sqrt{4 \text{ sq. ft.}} = 2 \text{ ft.,}$$

$$2 \times 0.50 = \$1, \text{ etc.}$$

or to let him hear expressions like 'As many times as 2 is contained in \$10,' '2 times greater than \$3,' etc., is to take away a large part of the value that mathematics should possess." For forms of solution the teacher is advised to examine C. Smith's *Elementary Algebra*, pp. 84-85, 157-158.

As Professor Smith has said, the formal solution of applied problems is now generally recognised as logic work as well as number work. The result of the problem is as important as ever, but it is not all important; the value of a logical explanation is now recognised—of course when the pupil has reached the proper grade.

## GEOMETRY.

The work in inventional geometry in Standard V is improving. Teachers have a better grasp of the matter and method than formerly. Nearly all now admit that "inventional geometry should precede the demonstrative so as to give the pupil many concepts to draw upon when he takes up syllogistic demonstration. Demonstrative geometry then becomes an easier subject, and he is surer of what he is doing, because he has more general notions as a basis." Its practical value in drawing, simple mensuration, and reasoning is also admitted. The pupils who have completed the inventional work prescribed for Standard V proceed surely and rapidly with the demonstrative geometry of the higher standards.

In Standard VI, when the work is not done carefully, the different modes of proof employed in inventional and demonstrative geometry cause confusion. Accordingly the subexaminers advise that the examination in geometry in this standard be divided into two parts to emphasise this difference. They further suggest that teachers adhere strictly to the use of signs as given in the prescribed text of Euclid. They report that the work of candidates from Standard VI was fair, from Standard VII not well done, and from Standard VIII good.

## NATURE STUDY.

Inspector Perrett reports: "Considerable interest is taken in nature study and agriculture and the effect of close observation and analysis of common objects and occurrences is plainly observable in the pupils' attitude towards other branches of study and in the care of the school grounds. The practical and experimental work in this subject is stronger along lines of plant than of animal life. In the classification and naming of collections of plants the teachers acknowledge the kindness of Mr. T. N. Willing, of the Department of Agriculture."

Inspector Bryan is not satisfied with what is accomplished in nature study. "Many teachers appear to think that the sole aim of this branch of study is to furnish pupils with a certain amount of information about animals and plants."

Not all teachers who have had training in nature study succeed in teaching it satisfactorily. Many teachers come to the Territories each year who have had no preparation for teaching it. In spite of these drawbacks I am assured that there is progress. Our course in nature study has received high praise from educational experts in England and America. Mr. John C. Medd, Hon. Secretary of the Nature Study Exhibition to be held in the Gardens of the Royal Botanic Society, Regents Park, London, in July next, has written a pamphlet on "Rural Schools and How to Improve Them," which has been published by the English Agricultural Education Committee.

In it he says: "It would be difficult to exaggerate the value of this nature study, and perhaps no one has expressed it more forcibly than Mr. Goggin, Superintendent of Education for the North-West Territories of Canada, in his report for 1898." (Here follows the general statement contained in that report.)

In a long article on the schools of Greater Britain published in the London Journal of Education, June 1901, the editor refers to the teaching

of agriculture and says that "in this matter the Canadian colonies lead the van." After referring to the work of Manitoba and Ontario he says: "Perhaps the object of this branch of teaching is best summarised in the Report for 1898 of the North-West Territories." (Here follows an extract from that Report.)

#### BOTANY.

I am not satisfied with the results of our work in botany. We use a standard Canadian text and our teachers are doing the work the text calls for. Yet our students, who are to be farmers, lawyers, mechanics, merchants, housewives, etc., not professional botanists, who are to found homes and grow plants for the adornment of these homes, and for use, are not obtaining that practical knowledge of plants that will be of direct service, are thinking too little of the plant as a living organism with needs of its own, with a work to do in the world, capable of adapting itself to its environment, not free from the struggle for existence. They are thinking too much of parts, forms, names, and look at plants as things to be analysed, classified and put away in a herbarium.

Many a student who has become expert, with the aid of a key, in discovering plant names couched in language "not understood of the common people," finds himself quite unable to answer practical questions which arise in the cultivation of plants. Whatever else he may learn in plant study he feels he ought to learn this phase of it. We are not trying to make botanists out of the pupils in our higher standards. We could not, if we would, taking into account their ages and the time spent in school.

An examination of recent texts, and leading articles on methods of teaching botany in secondary schools, shows pretty clearly that the divisions of botany now specially emphasised are ecology, physiology and gross morphology. I believe that the work in Standard VI should be dominated by ecology, with gross morphology, and some study of fundamentals in physiology. Such texts as Coulter's "Plant Relations," and Atkinson's "First Studies of Plant Life," treat the subject as I think we ought to treat it in Standard VI. In Standard VII the emphasis would then be on gross and general morphology with accompanying work in physiology and ecology. I assume that work in the laboratory and the field is an essential part of the course. It does not seem necessary to refer to the value of botanical study as mental training. That is admitted.

#### INSTITUTES.

Owing to pressure of other work I was unable to conduct institutes during May and June as at first arranged. Inspectors and teachers consider these institutes very helpful in many ways.

Inspector Fenwick says they are a means of maintaining that *esprit de corps* so helpful to any body of workers. They are a means of making clear to teachers trained outside the Territories the purpose of our Course of Studies and they help to disseminate knowledge of effective methods and newer books.

Inspector Perrett says: "I find teachers taking a decided interest in them, and besides the general stimulus due to comparison of methods and devices and measuring of standards and ideals of work, many useful hints are gained by inquiring teachers."



Inspector Hewgill says: "Constant enquiry respecting institutes was made by the teachers during my tour of inspection. They are looked upon with much favour by the profession, and the teachers from other provinces are particularly interested in them, as by means of them and the clear interpretation of the Course of Studies by the superintendent these teachers are enabled to arrive at a better understanding and appreciation of our aims."

#### TEACHERS' READING COURSE.

Teachers who had completed their professional training frequently asked for guidance in their subsequent reading. To encourage and direct them a teachers' reading course has been established. It is optional, and includes three books a year for three years.

Inspector Perrett reports: "There has not been the desired interest taken in the prescribed reading courses. This is not due to the nature of the course but to teachers not realising the benefits to be derived therefrom."

It is intended to present the advantages of this course to teachers at the institutes in May and June next, to suggest plans for local reading centres, and to indicate helpful methods of study.

Many teachers read the books but did not write the prescribed essays. The following received certificates: John O'Brien, C. W. Bryden; S. R. Douglas; J. J. Currie; Frank Holmes; Ida M. Clark; Mary Cumberland and Annie E. Callaghan.

The books prescribed for 1901 were "The Art of Study," Hinsdale; "Animal Life," Jordan and Kellogg; "The Teaching of Elementary Mathematics," Smith.

On these were set the following topics for essays:

#### *Hinsdale's "The Art of Study."*

(Select two subjects of which "A" must be one.)

A. Distinguish clearly, after Hinsdale, the "study lesson" and the "recitation lesson." Taking "Ulysses" (Fifth Reader, pp. 283-285), the French Period in Canadian History (1535-1763), or a converse theorem in geometry, show what is involved in the "study" of it, and what you would do for a pupil to ensure this "study."

B. Discuss somewhat fully the relation of attention to the art of study, giving illustrations drawn from your school room experiences.

C. Discuss with illustrations "methods of learning."

#### *Jordan and Kellogg's "Animal Life."*

(Select two subjects of which "A" must be one.)

A. "The modification and increase in complexity of structure in animals goes hand in hand with the increase of elaborateness or complexity in the performance of function." Through consideration of special groups of animals and also special processes or functions explain this statement.

B. What is meant by the "life cycle?" Discuss in detail each part of this cycle.

C. "When the conditions of life become adverse to the existence of a species it has three alternatives, namely, migration, adaptation, extinction." Discuss somewhat fully.

*Smith's "Teaching of Elementary Mathematics."*

(Select one subject from each group.)

1. (a) Discuss aims in teaching arithmetic, and consequent limitations in courses of study for public schools. (b) Discuss the ratio idea vs. counting as the beginning of number study in school.

2. (a) Write a note on the uses of algebra as an educational instrument, and in connection therewith discuss the value of problem solving. Comment on faulty forms in expressing solutions of problems, giving illustrations. (b) Write a note on the meaning, use and importance of "function" in algebra. Illustrate.

3. (a) Discuss the values and place of inventional geometry in a school course. Show its relation to demonstrative geometry. (b) Discuss the relations of arithmetic, algebra and geometry and indicate how parallel courses in these may be carried on in our schools with advantage to each subject.

In connection with this reading course, it is a pleasure to call attention to the efforts made by the members of the Northern Alberta Teachers' Association to provide themselves with suitable books for reference and reading. This association has purchased a library of one hundred volumes and divided it into five sections. These sections are kept at five centres and after three months are moved, till the circle is completed. The membership fee is one dollar per annum payable in advance. The fee may be paid to the local librarians, Messrs. Durrand, Ross, Hollbrook and Miss Timney, or sent to Inspector Bryan. Books are not to be kept for over two weeks, except in cases where the distance from the local centre is so great as to prevent the teacher from observing this rule. Books may be obtained from two to four o'clock on Saturday afternoon.

The list includes books on history, literature, geography, plant and animal life, pedagogy, school sanitation and decoration, science, ethics and mathematics.

Inspectors Perrett and Bryan deserve especial commendation for the initiation and successful carrying out of this scheme. It can be imitated with advantage in other districts.

#### MANUAL TRAINING SCHOOLS.

Through the liberality of Sir William C. MacDonald, and under the direction of Prof. Robertson, manual training schools have been established at Calgary and Regina. The cost of equipment and tuition for a period of nearly three years is borne by Sir William.

The cost of the equipment, benches and tools for a twenty bench school is about \$400. The fitting of the room with cupboards, racks, blackboards, etc., costs about \$300. All boys and girls of a suitable age attending the public schools have the benefit of the course of instruction free. One teacher taking twenty different pupils each half-day can instruct two hundred each week. The usual lesson is two hours long.

Work so far has been confined to wood and cardboard and the mechanical drawing in connection with bench work. It has been popular with pupils and parents. About one hundred Normal School students took a lesson each week during the session. One of these students is now taking a six months' course to qualify as a teacher of manual training.

It is too soon to speak of the success of the scheme in the Territories. Of the ultimate introduction into our cities and towns of a moderate scheme of manual training and of its success I have no doubt. As to the successful introduction into rural schools of a scheme of manual training such as the present I am not so sanguine. Questions of room, of cost, and especially of qualifications of teachers, enter into the rural school problem to an exceptional degree. Here it is wisdom to hasten slowly in order to have no failures, and so no prejudices to eradicate later.

I spent some time in the manual training department of the Chicago Educational Institute and saw what seemed to me a not wholly successful attempt to correlate manual training with every subject of study from reading to algebra. In certain of the Chicago elementary schools I saw work done by boys of about twelve in a way that clearly educated both the sensory and motor powers and yet had a reasonable connection with processes that would be of practical service in later life. In the Chicago English High and Manual Training School under Principal Robinson I saw about six hundred boys at work. The course is three years in length and students spend ten hours a week in the shops at wood work, iron and forge work, moulding, mechanical and architectural drawing. The remainder of each day is devoted to academic studies as in other high schools. The aim of this school is strictly an educational one. Here nothing is made for the sake of the thing made. No product of the school is for sale. At the close of the course its pupils are well fitted for entrance to technical schools and colleges—not a few persons say they are better fitted for life than if they had attended high schools of the literary type. I was very much impressed with the character of the instruction given and with the earnestness and intense application of the pupils.

In Minneapolis I saw some excellent work done in wood and iron under the direction of Mr. J. E. Painter. Eighty minutes a day is devoted to manual training, divided equally between shop work and drawing. The cost of material is about one dollar and fifty cents per pupil per year. Here I saw in the elementary classes weaving in various forms done on very simple home made looms, and rug, mat and basket making. The work in raffia and rattan was new to me. The teachers' efforts were directed towards making the work truly educational from the points of view of both motor and artistic training.

The manual training exhibits at the Pan American Exposition, Buffalo, interested me as illustrations of the very many ways in which the educational effect of this phase of school work may be secured, yet I found it more profitable to observe teachers and pupils at work in their rooms. The process with its imperfections is more instructive than the finished product on exhibition.

Manual training is not an added subject of study—rather an added mode of study. Manual training in several forms has been in our schools for years. In many ways pupils have been led to objectify their thinking, to convert thought into action because action tests and clarifies thinking.

A primary pupil who is learning to read looks at the sentence: "Put the pencil in the box," which has been written on the blackboard, and without uttering a word does the act. A pupil who has in his nature study observed the germination of a bean is asked to describe it. He does so not by words but by progressive pen and ink drawings. A pupil who has studied the continent structure of North America describes it neither by words nor drawings but moulds it in sand. A pupil reads the first stanza of the "Landing of the Pilgrim Fathers" and reveals the picture in his mind by a crayon sketch. He learns the content of pint, quart, gallon and peck by measuring grain. He learns how to find the area of a right angled triangle by cutting out in paper a square, then folding and bisecting it. He mixes clay, sand and humus, plants seeds and waters them that he may learn how plants grow.

In all these the child has been given something to do, not asked to say something. The processes by which he has been enabled to objectify his thoughts in these different ways are modes of manual training. In each the motor element in his life has been called into play in conjunction with the sensory element and clearer thinking has resulted.

The present manual training scheme introduces new materials—wood, metal, clay, etc., and therefore other processes for the objectification of thought, but in every case the training of the sensory and motor powers are carried on co-ordinately with a view to clear thinking. That these processes indirectly give training in the use of tools and methods of the workshop, and are therefore of utility from the industrial standpoint, is so much in their favour. But it must be remembered that the ultimate end of all this work is sound thinking. Back of the deed lies the thought that begat it.

Some advocates of manual training adopt a distinctively utilitarian view of it. They see in it the means of partial preparation for the life work of the coming artisan. They would have the manual training course in the public school followed by a wider course in the high school which would fit most boys for the workshop and qualify all for entrance to the trade school or the technological college. In the trade school advanced instruction in special industries would be given and master workmen prepared. In the technological college still more advanced instruction would be given, looking less, however, to the shop or business side of instruction and more to a knowledge of the sciences underlying industries. Book, laboratory and shop work would fit the students to become masters or superintendents.

Others value manual training in the public school because, in addition to making a pupil "handy," it may reveal to him his aptitudes and so indicate to him the special calling for which he is adapted. There are pupils whose special aptitudes are not revealed by literary studies, whose power to think develops through contact with things rather than words, and the good school makes provision for the development of each pupil.

Manual training suffers at times through the extravagant claims made on its behalf by injudicious friends. That it has value in training the senses is admitted, but it does not train the sensory powers in a greater or better degree than does nature study or elementary geography. It trains the will in some motor directions, but not necessarily in other directions. Special exercises strengthen the will in special fields. Manual training does not give any better general will training than any

other training does which calls for an equal amount of concentration, say in algebra and geometry. As a moral agent it aids in securing neatness, accuracy and truthfulness in different ways though not to a greater extent nor in better ways than some other school exercises. As a physical gymnastic it develops certain muscles but it is not an all round gymnastic.

Dr. Fitch, late Her Majesty's Inspector of Training Colleges, has said: "Do not let us exaggerate the educational value of hand work or suppose that all our difficulties are to be solved by turning our schools into workshops. Without co-ordinate intellectual training and development, manual training will only accomplish a part, and not the highest part, of the work which lies before the teachers of the future. There are necessary limitations to its usefulness and it is expedient for us to recognise them."

Mr. M. E. Sadler, Director of Special Enquiries and Reports for the British Government, has said: "Nor should it be forgotten that manual and practical instruction, given in a wrong way, may become as dangerously mechanical a part of education as any of the bookish methods so justly reprobated by educational critics."

Manual training does not take the place of reading, writing, arithmetic, etc., the traditional subjects. Its wisest advocates never belittle the place of the book, nor the use of the training received through the study of the traditional branches. They point to certain ways of increasing the efficiency of that training. They suggest, not an added subject for training, but an added mode of training. They desire to see intellectual, physical and industrial training more closely and helpfully correlated with a view to giving the pupil the mastery of himself and of fitting him, as far as the school can, to take a man's place in the world. In the working out of their plans they deserve the intelligent and friendly support of school men. Their aims are right. Their methods are in a state of evolution and the best results can be secured only through the co-operation of all teachers.

#### SUMMARY.

Inspector McColl in concluding his reports says: "I have much pleasure in stating that the character of the teaching is along improved lines and that marked progress is being made in the teaching of the prescribed subjects. During the past year the work done in the elementary classes was especially satisfactory. Generally speaking the work in literature, composition, writing, spelling and geography was satisfactory. In history and grammar there was evidence of weakness, or of a lack of thoroughness in the teaching. Nature study, drawing and music were not receiving the necessary amount of attention."

Inspector Bryan says: "On the whole good methods of work prevail and considerable interest is manifested. The demand for the technical works in our Teachers' Library and the large attendance at conventions, together with the spirited discussions of the papers read, are favourable signs."

Inspector Hewgill says: "Experience and observation have confirmed the idea that the Course of Study is well within the power of the pupils."

Inspector Perrett says the Course of Study is being closely followed

in all subjects except singing, drawing and hygiene, in which branches there is too much incidental teaching.

Inspector Rothwell says: "When the present condition of our schools is compared with that of ten years ago it becomes apparent that very considerable progress has been made. There are now better buildings, better trained teachers and better equipment and the school year is longer."

In England our Programme of Studies is attracting especial attention. In an article on the schools of Greater Britain, the editor of the London Journal of Education says: "The North-West Territories have every educational difficulty to contend with. . . . Nevertheless, this Programme of Studies shows a progressive spirit nowhere excelled. The North-West Territories stands foremost among the colonies which insist on direct ethical teaching as part of the curriculum." He quotes again approvingly from our programme on "Manners and Morals," on "Temperance," on "Drawing," and on "Agriculture."

The Government of Great Britain published during the year a synopsis of the system of education in the North-West Territories, occupying fifty-five pages in Volume IV of its Special Reports. In connection therewith the Director of Special Enquiries and Reports writes: "May I take this opportunity of saying how warmly interested we are in the educational documents which you have issued for the North-West Territories of Canada. I have frequently heard them referred to here in terms of the warmest appreciation."

The Commissioner of Education for the United States in a review of our system says: "The Report gives evidence of advanced ideas with reference to the conditions for effective schools."

While we have reason to congratulate ourselves on our progress we still have difficulties to overcome. If we could secure higher scholarship in our teachers and give them longer training; if we could give sufficient training to those teachers who come to us each year from other provinces, to familiarise them with our conditions, aims, and courses of study; if we could induce small schools to unite and provide for the conveyance of the children to central schools and so increase the length of their school year and improve the attendance and the character of the teaching, we should have solved some of our pressing problems and increased the efficiency of our system.

I have the honour to be, Sir,

Your obedient servant,

D. J. GOGGIN,  
*Superintendent of Education,*

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## APPENDICES.

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## APPENDIX A.

## EDUCATION OF DEAF MUTES.

*Principal McDermid's Report.*

MANITOBA DEAF AND DUMB INSTITUTION,  
WINNIPEG, *February 19, 1902.*

F. W. G. HAULTAIN, Esq.,  
*Commissioner of Education,*  
Regina, N.W.T.

SIR,—In accordance with the request of Mr. J. A. Calder, Deputy Commissioner of Education, I have the honour to make my third annual report regarding the deaf mutes of the North-West Territories, who have received instruction in the Manitoba Institution at Winnipeg.

At the date of my last report, March 25, 1901, there were twelve children in attendance, all of whom remained at the institution until the close of the term in June, when they went to their homes for the three months vacation. At the opening of the present term, the second week in September, they all returned to us with the exception of Robert Joice, of Red Deer, who has not up to the present time made any report as to his intention of returning. There have been two additions, one from Alameda and one from Caron. The total attendance at this date from the Territories is thirteen. Attached to this report you will find a list of those in attendance giving information as to residence, age, grade and progress.

I am very glad to say that the health of these children from the Territories has been excellent during the whole period covered by this report. We have not had one serious case of sickness among these children, in fact the health of the whole school has been very good during the past year. This condition has had an excellent effect upon the classes and we have had practically no interference from any cause.

As I have said in my previous reports, the children from the Territories compare very favourably with any of the pupils in our school, and, with only two or three exceptions, they rank with the best from Manitoba and British Columbia. They are all well behaved and thoroughly interested in their work, and all show constant evidence of their desire to make rapid progress. The course of study is practically the same as that explained in my last report.

As you are aware, we have, since the beginning of the present term, taken possession of the new addition erected and completed during the early part of last year. This new building gives every comfort and convenience for even a larger number of children than we have at present, and it seems to me that nothing has been left undone to make proper provision for every one of our children. We have larger school rooms, assembly hall, and play rooms than in the old building, and the sanitation in every respect is most satisfactory.

It will no doubt be gratifying to the parents of the children in the institution to know that we have an isolated hospital, as complete in so far as perfect isolation is concerned as at the General Hospital. Should we be unfortunate enough to have one case of an infectious disease the pupil would be separated at once from the other children, and there would practically be no danger of the spread of the disease unless the cause was from defect in the main portion of the building. It is a great comfort to the officers and to those responsible for the children to feel that we have the means of caring for these children in a way so that no criticism can be made in so far as appliances and conveniences are concerned.

I am also glad to report that with the increased accommodation we have been able to introduce carpentering and dressmaking in addition to the trade of printing, which has been taught here for several years. We have a first class dressmaker and carpenter who give a thorough instruction in these two useful trades, and we hope to turn out our pupils to be useful members of society as well as to have a practical education by which they may be properly enabled to earn their own living and become independent of their friends upon whom they would only be a burden were it not for the privileges they have in a school of this kind.

I have the honour to be, Sir,

Your obedient servant,

D. W. McDERMID,

*Principal.*

## APPENDIX B.

## MAINTENANCE OF SCHOOLS.

The public schools of the North-West Territories are maintained by legislative grants and by local taxation. The legislative grants are fixed by Ordinance and the following are the provisions governing them:

**1.** In aid of all schools—

In aid of schools organised and conducted under the provisions of The School Ordinance there shall be paid out of any legislative appropriation made for that purpose:

1. To rural districts an amount to be calculated as follows :
  - (a) To each district containing 6,400 acres or less of assessable land as shown by the last revised assessment roll of the district \$1.20 per day for each day school is kept open; to each district containing less than 6,400 acres as aforesaid one cent more per day for each 160 acres or fractional part thereof less than 6,400 acres; and to each district containing more than 6,400 acres as aforesaid one cent less per day for each additional 160 acres or fractional part thereof;
  - (b) To each district whose school is kept open more than 160 days in the year 40 cents per day for each additional day not exceeding 50;
  - (c) To each district engaging a teacher who holds a first class professional certificate under the regulations of the department 10 cents per day for each day such teacher is actually employed in the school;
  - (d) To each district whose school maintains a percentage of attendance as set forth in the following schedule the sum set opposite thereto for each day school is kept open:

*Schedule.*

A percentage of from	40	to	50	inclusive..	5 cents.
"	"	51	"	60	" ..10 "
"	"	61	"	70	" ..15 "
"	"	71	"	80	" ..20 "
"	"	81	"	100	" ..25 "

2. To village and town districts an amount to be calculated as follows:

- (a) To each district the sum of 90 cents per day for each day its school is kept open;
- (b) To each district engaging a teacher who holds a first class professional certificate under the regulations of the department 10 cents per day for each day such teacher is actually employed in the school;
- (c) To each district whose school maintains a percentage of attendance as set forth in the following schedule the sum set opposite thereto for each day school is kept open:

*Schedule.*

A percentage of from	50	to	60	inclusive..	5 cents.
"	"	61	"	70	" .10 "
"	"	71	"	80	" .15 "
"	"	81	"	90	" .20 "
"	"	91	"	100	" .25 "

3. To each district whose school attains a minimum grading on its efficiency in respect to grounds, buildings, equipment, government and progress a sum not exceeding fifteen cents per day to be paid in proportion to such grading for each day school is kept open; and such grading shall be based upon the inspector's report or reports as prescribed by the regulations of the department:

4. To each town or village district maintaining one or more rooms exclusively for pupils in standards above the fifth the sum of \$75 per term provided the daily average attendance of pupils in such room or rooms for any such term classified in accordance with the regulations of the department is at least twenty:

Provided that no grant shall be paid to any district under the provisions of this section unless an average attendance of six is maintained in its school for the term immediately preceding the time when the payment of the grant may be due:

Provided further that the grant payable to any rural district under subsection (a) of clause 1 of this section shall not be less than 90 cents per day for each day the school is kept open:

Provided further that any and every amount payable to any district under this section shall not unless otherwise provided be payable for more than 210 days in any calendar year:

Provided further that in any district where more than one teacher is employed each room shall rank as a district under the provisions of clauses 1, 2 and 3 of this section when the average attendance of the whole school shall at least equal twenty pupils to each teacher employed:

Provided further that if the sum of the grants payable to any district under clauses 1 or 2 of this section shall exceed 70 per cent. of the salary actually earned by the teacher or teachers employed in the district during the year the amount of the grant payable at the end of the second term of the year shall be reduced so that the total amount of the grant paid shall equal the said 70 per cent.:

Provided further that payments may be made in respect of the amounts earned under clause 1 or clause 2 of this section at the end of the school terms ending on the thirtieth day of June and the thirty-first day of December in each year on receipt of the returns hereinafter provided and on receipt of the treasurer's bond and teacher's agreement as provided in The School Ordinance:

Provided further that in case the school of any district is open only during a portion of the year payment may be made to such district in respect of the amounts earned under clause 1 or clause 2 of this section as soon as the school closes for the year on receipt of the returns, bonds and agreement mentioned in the next preceding proviso:

Provided further that when the return of the treasurer of any district as hereinafter provided shows that the district is indebted to any teacher or teachers the grant payable to such district under clause 1 or

clause 2 of this section or such portion of it to the amount of such indebtedness shall be paid proportionately to such teacher or teachers:

Provided further that the grant earned by any district under clause 4 of this section shall be paid to such district at the end of the school year and in case the school of any district is not inspected during the year the district shall be paid for such year such grant as it may be entitled to upon the basis of the grading its school attains on the first inspection in the following year.

**2.** The Lieutenant Governor in Council may order the payment of a special grant to any school whether organised according to law or not.

**3.** For the purpose of estimating the grant which may be earned by any school on account of the attendance of pupils the average attendance for any calendar month during which the school is kept open shall be calculated by dividing the aggregate days attendance for such month by the number of days school is kept open during such month; the percentage of attendance for any month school is kept open shall be calculated by dividing the average attendance for such month by the number of pupils in actual attendance during such month; and the percentage of attendance for any term shall be calculated by dividing the sum of the monthly percentages of attendance by the number of such monthly percentages of attendance.

**4.** The board of every district receiving a grant under clause 3 of section 1 hereof shall expend one half of the amount of such grant received in each and every year on the purchase of books for a school library and such books shall be selected from a list authorised and furnished by the department.

## APPENDIX C.

## CONSOLIDATION OF SCHOOLS.

The following are the provisions of The School Ordinance (Sections 165 and 166) respecting the consolidation of schools and the transportation of pupils:

**165.** Upon a petition hereinafter provided for being transmitted to the commissioner he may empower the board of any rural district to enter into an agreement with any other board or boards for the education of the children of its district upon such terms as may be mutually agreed upon and approved by him and the board entering into any such agreement shall have full power and authority to make the necessary levy and assessment for the purpose of carrying out the terms of the agreement and for providing for the conveyance of children to and from school under the provisions of The School Assessment Ordinance:

Provided that any such agreement may be terminated by any board a party thereto by giving notice on or before the first day of October in any year and upon such notice being given the agreement shall cease and determine on the last day of the month of December following.

(2) The petition for permission to enter into such an agreement may be in form prescribed by the commissioner and shall be signed by at least two-thirds of such resident ratepayers of the district as are the parents or guardians of children between the ages of five and sixteen years inclusive.

(3) The statements contained in the petition shall be verified by the affidavit of two of the subscribing petitioners and the signatures of the ratepayers signing the petition shall be verified by the affidavit of a subscribing witness thereto.

**166.** The commissioner may subject to the approval of the Lieutenant Governor in Council make such regulations as are deemed necessary and expedient for the proper conveyance of children as hereinbefore provided and for the keeping of proper records of the number of children conveyed, the distance travelled, the cost of conveyance and such other information as may be desired.

In all cases where two or more districts have entered into an agreement for consolidation The School Grants Ordinance (Section 10) provides that there shall be paid at the end of each school term from and out of any moneys appropriated by the Legislative Assembly for school purposes the following amounts—

1. To every district providing the means of conveyance for children from one district to another the sum of 60 cents per diem for each day upon which such conveyance is provided in accordance with the regulations of the department:

2. To every district agreeing as aforesaid to educate the children of one or more districts the sum of 4 cents per diem for each pupil in average daily attendance who has been conveyed to and from the school house in such district or educated therein in accordance with the regulations of the department:

Provided that the total number of days in each year for which such grants may become payable shall not exceed 210:

Provided further that in case the number of children conveyed from one district to another in accordance with the terms of the agreement falls below an average of six for any term the grant payable under subclause 1 of section 10 hereof shall be paid in the proportion that the average number of children conveyed for the term bears to six:

Provided further that the total amount of the grant which shall be payable under subclause 2 of section 10 hereof shall not exceed for any term the amount of 40 cents per diem unless it is satisfactorily shown that the presence of such children necessitated the employment of one or more additional teachers in which case the total amount of the grant thus earned shall be paid.

## APPENDIX D.

## TEACHERS' ASSOCIATIONS.

THE following is a list of the Teachers' Associations which have been organised in the Territories:

Name	President	Secretary
1 North-West . . . . .	Mr. A. H. Ball, B.A., Moose Jaw	Mr. J. F. Middlemiss, Wolseley
2 North-Eastern Assiniboia.	Miss A. E. Johnstone, Yorkton	Mr. Colin McLeay, Dunleath
3 South-Eastern Assiniboia.	Mr. J. F. Hutchison, B.A., Oxbow	Mr. H. McGregor, Carievale
4 Eastern Assiniboia. . . . .	Mr. C. H. Lee, B.A., Moosomin	Miss Callaghan Whitewood
5 Central Assiniboia. . . . .	Mr. J. J. Currie, In- dian Head	Mr. Jas. Robinson, Sintaluta
6 Regina. . . . .	Mr. J. B. Hugg, Re- gina	Miss M. Vickerson, Regina
7 Saskatchewan . . . . .	Mr. A. C. Howard, Prince Albert	Miss A. R. Sharman, Prince Albert
8 Moose Jaw. . . . .	Mr. J. O. Quantz, Ph. D., Moose Jaw	Mr. J. A. Munro, Moose Jaw
9 Central Alberta. . . . .	Mr. R. E. Campbell, Banff	Mr. H. J. Jarrett, Calgary
10 Red Deer. . . . .	Mr. D. C. Bayne, La- combe	Mr. James Turnbull, Red Deer
11 Edmonton District. . . . .	Mr. W. Ramsay, Ed- monton	Miss M. M. Currie, Strathcona



## APPENDIX E.

## THE DOMINION EDUCATIONAL ASSOCIATION.

OTTAWA. *August 14-16, 1901.*

## CONDENSED MINUTES OF PROCEEDINGS.

The fourth convention of the Dominion Educational Association met at 8 p.m. in the Assembly Hall of the Normal School, Ottawa, the president, Dr. MacCabe, in the chair. An address of welcome was delivered by W. D. Morris, Esq., Mayor of Ottawa.

Addresses in reply were made by the President; Hon. P. Boucher de la Bruere, Superintendent of Education, Quebec; Dr. Goggin, Superintendent of Education, North-West Territories; H. V. B. Bridges, M.A., Fredericton, New Brunswick; G. R. Marshall, Halifax, Nova Scotia; W. Scott, B. A., Principal, Normal School, Toronto, Ontario; P. L. Gray, Inspector Manual Training, London, England; Professor Robertson, Commissioner of Agriculture, Ottawa.

On motion, Dr. Bridges, Principal Ellis, Prof. Magnan, Mr. Marshall and Mr. Harstone were appointed a committee on resolutions.

At subsequent meetings the following papers and addresses were discussed: The Desirability of Dominion Registration of Trained Teachers, Dr. Robins, Principal, McGill Normal School; Patriotism in Schools, Mrs. Clark Murray; Comment cultiver le sentiment Nationale a l'Ecole Primaire, Prof. Magnan, Laval Normal School; Manual Training, Prof. Robertson, Ottawa; Art Education (accompanied by a large number of drawings by pupils in United States Schools), A. F. Newlands, Buffalo, N.Y.; A Dominion Educational Bureau, Dr. Harper, Quebec; Indian Schools, Miss Hughes, St. Regis.

Dr. Goggin moved, seconded by Dr. Sinclair, (1) That it is desirable to test, under proper conditions, the educational value and practicability of certain recent departures in the courses of study in elementary schools. (2) That a committee consisting of Supt. D. McIntyre, Winnipeg; Principal Scott, Toronto; Inspector Cowley, Ottawa; Dr. A. H. McKay, Halifax; Inspector Carter, St. John; Dr. Inch, Fredericton; Dr. Anderson, Charlottetown; Principal Robertson, Charlottetown; Inspector Parker, Leeds, Quebec; Prof. C. J. Magnan, Laval Normal School, Quebec; and the mover and seconder be appointed to consider and devise plans for practical tests of these and other departures that may seem advisable, and to report at the next meeting. (3) That Professor J. W. Robertson, of Ottawa, be invited to act in conjunction with this committee.

Principal Ellis and Prof. Magnan, on behalf of the committee on resolutions, reported recommending the adoption of the following resolutions: (1) In regard to the request presented by the hon. secretary on behalf of the "Daughters and Children of the British Empire," that one hour a month in every school be set apart for the teaching of patriotism, and a special programme prepared for that purpose, the committee recommends no action. (2) That this association expresses its entire

sympathy with the efforts to extend the educational advantages to isolated labourers in the newer districts of Canada. That the action of employers in mines, on railroad construction works, pulpwood operations and lumbering generally, in volunteering to erect suitable buildings at their camps for reading, study and entertainment be heartily commended. And, in view of the fact that a considerable proportion of the employees have been found unable to read or write, this association urges provincial governments and the public generally to co-operate in providing, not only travelling libraries for these reading rooms, but also elementary instruction for those who cannot at present avail themselves of such privileges.

(3) That in the matter of Dominion Registration, a committee of four members be appointed to consider the subject and report at the next meeting at Winnipeg; the committee to consist of Dr. Goggin, Dr. McKay, Hon. P. Boucher de la Bruere and the Minister of Education for Ontario.

(4) That this association endorses the request of the Toronto Principals' Association in regard to having the metric system of weights and measures compulsory in Canada.

(5) That the communication from the Women's Christian Temperance Union be endorsed in so far as the inculcating of temperance principles in the schools is concerned.

(6) That in view of the action taken by this association at its last meeting, we as an association suggest that the respective legislatures be approached in regard to granting a special bonus to those schools in which efficient teachers have been engaged for a continuous period of three years, at a salary which the respective legislatures consider ample. That a copy of this report be sent to the various provincial associations for discussion and action and they to report to this association at its next meeting in Winnipeg in 1903.

#### *Officers Elected.*

President—D. J. Goggin, M.A., D.C.L., Regina, N.W.T.

Vice-Presidents—Hon. P. Bouchere de la Bruere, D.C.L., Quebec; Hon. Richard Harcourt, M.A., K.C., Toronto; A. H. McKay, B.A., LL.D., Halifax; Alexander Anderson, LL.D., Charlottetown; Hon. A. Campbell, Winnipeg; Hon. F. W. G. Haultain, B.A., Regina, N.W.T.; Alexander Robinson, M.A., Victoria, B.C.

Directors—Wm. Scott, B.A., Toronto; F. H. Schofield, Winnipeg; S. R. Robins, M.A., LL.D., Montreal; G. W. Parmelee, B.A., Quebec; G. U. Hay, B.Ph., F.R.S.C., St. John, N.B.; J. B. Hall, LL.D., Truro, N.S.; Prof. J. Robertson, Charlottetown; F. H. Cowperthwaite, Esq., Vancouver, B.C.

Secretary—W. A. McIntyre, B.A., Winnipeg.

Treasurer—J. T. Bowerman, M.A., Ottawa. (Since resigned and Dr. MacCabe, Ottawa, appointed.)

#### *Kindergarten Section.*

The following papers were read and discussed: Educational value of Music, Mrs. F. M. S. Jenkins; The Parents' Responsibility to the State, Mr. Justice Burbidge; Some Phases of Infant Mind from a Mother's Point of View, Mrs. C. E. Bolton; Play method of Teaching Music (illustrated), Miss J. Stocks.

Officers elected—President, Miss M. E. McIntyre, Toronto; Vice-

President, Miss Barnett, Winnipeg; Secretary, Miss E. Cody, Winnipeg; Directors, Miss C. Newman, Vancouver; Miss Patterson, Truro; Miss Campbell, Vancouver.

*Elementary Section.*

The following papers were read and discussed: What the Teacher can do for the Farmer, Principal Marshall, Halifax; Drawing in the Public Schools, Mr. J. N. Dobie, Ottawa Normal School; The School as a Preparation for Practical Life, Principal Smith, Westmount, Quebec; English Grammar as a Culture Subject, Principal Meldrum, Morrisburg, Ontario; Comparison of the Common School Curriculum of the various Provinces, Dr. Robins, McGill Normal School; Manual Training, Principal Kidner, Truro, N. S.; The Upbuilding of Character, Principal McIntyre, Winnipeg; School Systems Described—New Brunswick, Mr. Brittain, Fredericton; Quebec, Mr. Parmelee; Nova Scotia, Inspector Creighton, Halifax; North-West Territories, Dr. Goggin, Regina.

Officers elected: President, E. D. Parlow, Ottawa; Vice-President, Ernest Smith, Westmount, Quebec; Secretary, G. M. Ritchie, Toronto, Ontario.

*Higher Education Section.*

After an informal address from President Goggin on ways to increase the usefulness of the association, the following papers were read and discussed. Higher Elementary Phase of Secondary Education in England, W. Packenham, B.A., Education Department, Toronto; Modifications of High School Courses Demanded by the Needs of the Time, W. J. Robertson, B.A., LL.B., St. Catharines, Ontario; Entrance Requirements to High Schools and Universities, Prof. John Squair, University of Toronto; Should Greek and Latin be retained as subjects in our Secondary Schools? Principal Henderson, St. Catharines Collegiate Institute; Modern Geometry, Prof. N. F. Dupuis, Queen's University; The Teaching of History, A. Stevenson, B.A., Pickering, Ontario; Geometry in Secondary Schools, A. H. McDougall, Ottawa; The Educational Demands of Democracy, John Miller, B.A., Deputy Minister of Education for Ontario; The Problem of Composition, Miss Janet Carnochan, Niagara, Ontario; Literature in the High School, Prof. Marshall, Queen's University; What a Pupil has a right to expect as the result of his High School Training in French and German, Prof. A. H. Young, Trinity University, Toronto; A Study of the Life Relations of Plants, G. U. Hay, Ph.B., St. John, N.B.; The Educational and Industrial Significance of the Later Developments of School Work in Kindergarten, Nature Study and Manual Training, Principal Ellis, Collegiate Institute, Kingston, Ontario.

Officers elected: President, Prof. John Squair, B.A., Toronto University; Vice-President, W. S. Ellis, B.A., B.Sc., Kingston; Secretary, G. U. Hay, Ph.B., St. John, N.B.

*Inspection and Training Section.*

The following papers were read and discussed: What Child Study has done for the Teaching World, Principal Scott, Normal School, Toronto; Methods in Arithmetic, Inspector W. J. Summerby, Ottawa;

Duties of the School Inspector outside the Schoolroom, Inspector John Parker, B.A., Leeds, Quebec; Duties of the School Inspector inside the Schoolroom, J. W. McOuatt, B.A., Lachute, Quebec; The Psychology of Nature Study, Inspector Silcox, B.A., B. Paed., St. Thomas, Ontario; The Grading of Urban Schools, William Houston, M.A., Toronto; The Defects of our Common Schools, Inspector Cowley, Ottawa; The Teaching of French, Principal Truell, Lachute, Quebec; Attention—How it can be secured in the Schoolroom, Dr. Bridges, St. John, N.B.; Reading in Elementary Schools, Inspector J. F. White, Toronto; The Third Element in Education, Dr. Harper, Quebec.

This section passed resolutions favouring consolidation of schools, a special bonus to schools employing competent teachers continuously for three years, and the purchase of British in preference to American Maps.

Officers elected: President, J. M. Harper, Ph.D., Quebec; Vice-President, William Scott, B.A., Toronto; Secretary, D. McIntyre, M.A., Winnipeg.

Next Place of Meeting: Winnipeg, July, 1903.

### TEACHERS' CONVENTIONS, N. W. T.

The teachers of the Territories assembled in convention at eight different centres during the year 1901. The following programmes indicate the character and scope of their meetings:

#### *Programme, Wolseley Convention, held September 19 and 20.*

1. Geography in Junior Grades, Mr. N. B. Williams, Chickney S. D.
2. Writing, Mr. F. J. McManus, Summerberry S. D.
3. Arithmetic: Type solutions, Mr. J. E. Laird, Wolf Creek S. D.
4. Care of School Buildings and Grounds, Mr. Wm. Harvey, Southgate S. D.
5. Effect of Attendance upon Classification, Mr. W. J. Orchard, Rose Valley, S. D.
6. Drawing as a Means of Expression, Miss E. Burnett, Regina Normal School.
7. History: Teachers' Preparation, Mr. J. J. Currie, Indian Head S.D.
8. Singing: First Lesson on the Staff, Miss E. Burnett, Regina Normal School.
9. Literature Interpretation, Mr. Jas. Robinson, Sinton S. D.
10. Study of Pictures, Miss E. Burnett, Regina Normal School.

#### *Programme, Edmonton Convention, held October 14 and 15.*

1. Drawing, Mr. Geo. Durrand, Fort Saskatchewan S. D.
2. Composition: Pictures and models, Mr. M. Hogan, Bellerose S. D.
3. Geography, Mr. F. W. Kerr, Strathcona S. D.
4. Literature (Standard V), Mr. A. Hartley, B.A., Turnip Lake S. D.
5. Spelling (Standard III), Miss M. A. Ector, Fouquet S. D.
6. Arithmetic: Type solutions, Mr. R. Fletcher, Poplar Lake S. D.
7. Expressive Reading, Miss A. Kennedy, John Knox S. D.
8. History, Inspector Bryan, Edmonton S. D.

9. Canadian Poetry, Miss E. Miller, Edmonton S. D.
10. Comparison of Constitution of Canada and Australia, Mr. D. S. MacKenzie, Strathcona S. D.
11. Music, Mr. W. J. Bower, Clover Bar S. D.

*Programme, Wapella Convention, held September 12 and 13.*

1. President's address, Mr. D. Burke, Wapella S. D.
2. Nature Study in Standard III, Mr. D. Miller, B.A., Ravine Bank S. D.
3. The Relative Value of the Study of Natural Sciences and the Study of Literature, Mr. A. J. Mather, B.A., Whitewood S. D.
4. History, Mr. P. O. Nelson, Brookside S. D.
5. Report of Meeting of the North-West Teachers' Association, Mr. C. H. Lee, B.A., Moosomin S. D.
6. Mistakes in Discipline, Mr. C. H. Lee, B.A., Moosomin S. D.
7. Character Building, Miss M. E. Thompson, Prosperity S. D.
8. Geography in Standard III, Mr. D. McGuire, Montgomery S. D.
9. Method in Teaching "Narcotics and stimulants," Mr. J. Burke, Hillburn S. D.
10. Supplementary Reading in Standards I, II and III, Mr. J. O'Brien, St. Istvan S. D.
11. Reading, Mr. D. Burke, Wapella S. D.

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THE NORTH-WEST TEACHERS' ASSOCIATION.

This association was organised in 1898 at a meeting of the sub-examiners held at Regina in July of that year. Its object is broadly stated as the advancement of educational interests and the improvement of the condition of the teaching profession in the North-West Territories. Though it is not yet completely representative, gratifying progress has been made in view of the object stated. The association consists of men with a practical knowledge of the working of our school system and its needs and aims, embracing in its membership the normal school teachers, the inspectors of schools, and representatives from different teachers' associations. Amongst other work it has established an employment bureau under the direction of Mr. J. F. Middlemiss, of Wolseley, and organised an art committee in charge of Inspector Fenwick. The employment bureau supplies teachers to schools at barely the cost of management, effecting thereby a large saving to those securing employment through its offices. Consisting of men actually engaged in teaching in the North-West it is cognisant of the needs of the schools and is interested in supplying only efficient teachers.

The art committee is educating teachers in school room decoration, an important feature in school work, and yet one manifestly outside the province of official programmes of study or school ordinances.

A committee appointed at the meeting held in July, 1901, is making provision for a number of papers and addresses dealing with the educational problems of the North-West.

It will be seen that the efforts of the association are directed towards the development of a feeling of unity in effort and interest among the

teachers. It has met with the cordial support of those who understand its objects, and seeks in its own sphere the improvement of the general educational conditions, especially from the standpoint of the teachers.

Since its inception the agency has been under the management of Mr. Middlemiss, who is at present assisted by the following local managers: Chas. Nivins, B.A., president, Prince Albert, Sask.; J. F. Boyce, B. A., Box 266, Calgary, Alta.; D. S. MacKenzie, Strathcona, Alta.; C. H. Lee, B.A., Moosomin, Assa.; J. A. Gregory, B.A., Yorkton, Assa.; J. A. Montjoy, B.A., Carnduff, Assa.

#### TERRITORIAL TEACHERS' ASSOCIATION, 1901.

##### *Circular of the Committee on Art.*

At the annual meeting of the association last year a committee was formed to further the artistic adornment of our schools and to promote the study of art therein as a means of culture. It was thought that this committee might suggest lines of work to the representatives at the annual meeting of the association, supply the local associations with such helpful information regarding the adornment of schools as may be procurable and with the addresses of dealers in pictures and casts, while throughout the year its members would serve as a bureau of information on all matters connected with this side of school work.

That the aesthetic claims attention in school work need not be discussed. Of the helpfulness of beautiful environment Plato has written. Of its need every thoughtful teacher in our country is persuaded. It is to be hoped that this committee will assist in a work that educators have recognised as wise and necessary.

One thing seems certain. If our teachers are not a source of inspiration and guidance our children will receive little assistance in forming a love for the beautiful. The struggle for a footing that has till lately been characteristic of the life of our settlers has left distinct materialistic leanings. There is too little attention given to those things that do not mean money. Those "who look after the rights of the ratepayers" are firm in their grasp on the treasurer's purse strings. In many sections the struggle for necessary equipment is not yet over, that for decoration is scarcely dreamed of. In influencing the children is it not likely that the homes will be helped?

##### *Use of Decorations.*

The best answer to the question of the use of decorations runs along these lines:

1. They add to the attractiveness and cheerfulness of the place in which the children spend the greater part of their waking hours.
2. They have also collateral uses in composition, history, nature study and geography.
3. They cultivate a love of beauty, and so reinforce moral training.

##### *What the Teacher can do.*

The following suggestions are of practical importance:

1. The walls of the schoolroom should not be shiny. Delicate tintings of soft gray greens, or delicate shades of dull blue are best. The colour of the walls and ceiling should harmonise with the wood work; that of the ceiling a very light tint. Hall ways look well in terra cotta tones. Picture moulding adds greatly to the appearance of the room, while it has the advantage that the position of pictures can be changed without defacing the walls. It can be bought at three cents a foot. Moulding should be about one foot from the ceiling on a ten foot wall.

2. Cleanliness must exist before there can be beauty. The dusting and scrubbing, the shaking of curtains and screens, keeping litter of papers off the floor, picking dead leaves from window plants, the covering of unsightly pots with coloured paper, the caring for the blackboards, the keeping of stoves and pipes free from rust, etc., etc.—all things that tend to tidiness must be observed.

3. The decorations need not be expensive. The coloured border sold by Kindergarten dealers (Selby & Co., Toronto) make an attractive temporary frame for such coloured prints as are issued as supplements to the Christmas numbers of the great illustrated papers. A better, more effective, yet inexpensive frame is made with passepartout paper. The picture is put behind its glass covering with or without a mat. A cardboard backing is pierced with paper fasteners to attach the cord. The gummed passepartout paper (which is about one inch wide) is folded over the edge of the glass to the cardboard backing, thus giving a "frame effect" while it holds the picture in place and excludes dust. Different coloured borders may be purchased. This paper is sold by Devoe and Reynolds Co., 176 Randolph St., Chicago, at ten cents a roll of twelve yards. Steinberger, Hendry and Co., Toronto, also deal in it.

Such devices as these make a good beginning; neither of them will take the place of the permanent wooden frame. In the choice of a mat and of the frame so much depends on the individual picture that no general direction can be given. Good directions will be found in Burrage and Bailey's "School Sanitation and Decoration" (D. C. Heath & Co., Boston). It is one of the latest and best inexpensive books on the subject.

4. There is a fourth source of help that might have been mentioned earlier, viz., the blackboard. Good stencil decorations may be had cheap. We suggest that teachers attending institutes may exchange. Three objections to stencil decorations are commonly advanced—that many stencils are inartistic, that the ordinary coloured crayons do not give sufficient variety in gradations of tint, and that lazy teachers leave them on the board long after their usefulness has passed. Teachers who are thoughtful, ingenious and energetic need but have these objections pointed out.

#### *List of Pictures.*

For the guidance of purchasers we append a list of pictures. It has been carefully prepared from those selected for the Boston Schools by Hopkins and from the suggestive list in Burrage and Bailey's "School Sanitation and Decoration."

. Suitable for all grades.

Sistine Madonna (detail), Raphael.

Madonna of the Arbor, Dagnan-Bouveret.

- Arrival of the Shepherds, Lerolle.  
 Bayard (dog), Paton  
 The Nursery (lambs), Waterlow.  
 At the Watering Trough (horses), Dagnan-Bouveret.  
 September (trees), Zuber.  
 The Watering Trough in the Meadow (cow), Dupre.  
 Frightened Bather (mother and child), Demont-Breton  
 Suitable for Primary Grades.  
 Baby Stuart, Van Dyck.  
 Sunshine (child), L. A. Tadema.  
 Girl with Cat, Hoecker.  
 The Cat Family, Adam.  
 A Helping Hand (girl and old man in boat), Renouf.  
 Steady (children on beach), Morgan.  
 Feeding Her Birds (mother and children), Millet.  
 Kiss Me (dog and child), Holmes.  
 Can't You Talk (dog and child), Holmes.  
 Suffer Little Children, Plockhurst.  
 Repose in Egypt.  
 Charitas (woman and children), Thayner.  
 Intermediate Grades.  
 Pharoah's Horses, Herring.  
 The Chorister Boys, Mrs. Anderson.  
 The Doctor, Fildes.  
 The Shepherdess, Le Rolle.  
 Princes in the Tower, Millais.  
 The Balloon (hayworkers), Dupre.  
 Diana or Christ (if a large copy), Long.  
 The Soul's Awakening (girl), Sant.  
 The Angelus, Millet.  
 Spring (trees and water), Corot.  
 Holy Family, Murillo.  
 Madonna of the Chair, Raphael.  
 Tennyson, Longfellow, Bryant, etc.

All these subjects are good. The manner of reproduction whether wood, steel, stone print, half tone, photographic, etc., will mean much.

*Addresses of Dealers.*—All of these may be had in reasonably cheap form from the dealers whose addresses we give below :

The Chicago Art Education Co., 1223 Masonic Temple, Chicago, issue a very helpful list of pictures for school use. They handle casts as well as pictures. Of these Donatello's "Head of Laughing Boy," and "St. John" are excellent. Sixteen inches high; price 75 cents and expressage.

The Prang Publishing Co., 151 Wabash Avenue, Chicago, issue a "dollar edition" of pictures of an excellent size for the school room. Their Canadian agents are The Steinburgher, Hendry Co., Toronto, who list goods at the New York price.

J. C. Witter & Co., 123 5th Avenue, New York, have issued a series of cheap reproductions of famous pictures at 25 cents each—Plate 14x18 Card 20x25. Le Rolle's "Shepherdess" is especially good. Others we have seen of this series are by no means as well executed. This firm publishes photo prints on cards 22x28, post paid 70 cents. Their catalogue is 4 cents. They deal in casts as well,



The Helman-Taylor Art Co., 257 5th Avenue, New York, publish "Harper's Black and White Prints" on 16x23 paper. The price is 35 cents each.

The three great photographic houses of the United States furnish an unlimited choice of pictures. They are: The Soule Photographic Co., 338 Washington Street, Boston; The Berlin Photographic Co., New York; and The Moulton Photographic Co., 50 Bromfield Street, Boston, Mass. The Art Metropole, 149 Yonge Street, Toronto, offer Cabinet Artotypes at 3 cents each. The Perry Pictures Co., Malden, Mass., issue a series of some two thousand subjects at a cent each. Their "5 cent" large pictures are excellent, although rather small for framing. The Canada Drug and Book Co., Regina, carry these in stock.

Geo. P. Brown and Co., Beverley, Mass., also publish reproductions at a cent each. Their large platino and carbon prints seem even better than the Perry's. The pictures supplied by these two firms make good subjects for passepartout mounting.

The Woman's Home Companion, Springfield, Ohio, is making a temporary offer of thirteen pictures. These are 20x25 (including margin). Three are given for 29 cents. Those we have seen are good subjects for a small school room.

In this connection we may call attention to the series issued by The Ladies' Home Journal (Curtis' Publishing Co., Philadelphia, Penn.) at one dollar, untinted; tinted, two dollars.

### *The Study of Pictures.*

A picture is the expression of a thought. As such it must conform to the laws of expression, and it may be studied just as a novel may be studied, a play or a piece of music. It has a central thought to which all details must conform.

A picture has peculiar powers for expressing beauty other than that of expressing a beautiful thought. For example, the power of giving beauty, through its composition, of line, of mass and of gradations of light and shade.

Each division of thought and treatment may be studied separately. Appreciation increases through study. The more simple points in the composition of a picture may be taken up with the senior pupils. Excellent books have been published lately that will throw light on the subject for those who care to pursue it. "How to judge of a picture" (Eaton and Mains, New York); "Art for Art's Sake," Van Dyck (Scribner's); "How to Enjoy Pictures," Emery (Prang); "Art and the Formation of Taste," Lucy Crane (The McMillan Co.).

### *Hints in Choosing Pictures.*

In choosing pictures we offer the following suggestions:

1. Have variety of subjects in your room—landscape, animals, buildings, portraits, etc.
2. Primary children delight in pictures of animals and of children, but these need not be confined to the primary grades.
3. The little known should find its place in pictures, e.g., country children should have some city scenes and architecture, while town children should be reminded of the life of the farm and of the country. Our prairie folk welcome views of the sea, of woods and of mountains.

4. There should not be overcrowded walls. Would it not be better to wait two years for one large good picture (after having made a beginning) than to have smaller inferior ones? The teacher's good taste must guide him.

5. The space to be filled frequently determines the size of the picture purchased. Some subjects lose much of their interest when reproduced on a small scale.

6. Coloured pictures should be selected with caution—the cheap oil “made-while-you-wait” kind avoided with decision.

7. The subjects should bring pleasure; *e. g.*, Landseer's “The Highland Shepherd's Last Friend” is a beautiful subject, but it is not suitable as a daily companion for a child. “The Dying Gaul,” “Ecce Homo,” “The Last Judgment,” are great, but their place is not in the primary school.

The above suggestions, it is hoped, will be helpful to teachers who are interested in this phase of art education. Though a new country affords limited opportunities for that development which comes through the study of art it imposes all the greater responsibility on those who are charged with the education of its youth.

On behalf of the art committee,

A. M. FENWICK, Regina.

J. R. POLLOCK, Regina.

C. H. LEE, Moosomin.

July 20, 1901.

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### *Employment Agency.*

One of the first questions considered by the Territorial Teachers' Association was the desirability of establishing an employment agency in the interests of trustees and teachers. As the private teachers' bureaux operating in the Territories charged from three to five per cent. of the first year's salary for securing a position for a teacher this was felt to be a great injustice. The outcome was that the association decided to take the matter up and Mr. J. F. Middlemiss, principal of Wolseley school, was authorised to organise an agency.

The object of the agency is to bring together teachers who are unemployed and trustees who are seeking to engage teachers. It has now been in operation for more than two years and has met with unqualified success. During the year 1901 it succeeded in placing twice as many teachers as it had the previous year, and from present prospects there is every likelihood of its business for the current year being largely increased.

In dealing with boards of trustees the agency does not guarantee that every teacher appointed or recommended will be a success. It endeavours, however, to make itself acquainted with the previous records of applicants and to supply districts with the very best teachers available.

As the expense of conducting the agency is merely nominal there is no charge to trustees for providing them with a teacher. On the other hand the teachers helped are expected to pay only the bare expenses of management—an amount equal to about one per cent. of salary earned during the first year.

The manner in which the agency is conducted is explained by the following clipping taken from one of its circulars :

Teachers out of positions file an application, including testimonials, with the local manager. Trustees, desirous of securing a teacher without advertising, fill out the form below, detach it from the circular and send it to the manager, along with any further information they may consider necessary to give. Then the manager will forward a number of applications ; or, if the selection be left to him, he will do his best to fill the position satisfactorily. Where post offices are remote from the railroad the latter is often the better plan, as our officers are all experienced men.

NOTE : The Department is indebted to Mr. A. H. Ball, principal of the Moose Jaw school, Mr. J. F. Middlemiss, principal of the Wolseley school, and Inspector Fenwick for furnishing the above statements respecting the organisation and aims of the Territorial Teachers' Association.

## APPENDIX F.

PROGRAMME OF STUDIES FOR THE SCHOOLS OF THE  
NORTH-WEST TERRITORIES.

This Programme is based on a *minimum* requirement for each standard. It is prescribed by the Council of Public Instruction as a guide in classifying pupils. It may be modified to meet the needs of special schools but not without the written consent of an inspector who shall forthwith report to the Council. The work in each standard includes a review of the essentials in previous standards.

It shall be the duty of each teacher to make a time table, based on this programme, and to present it to the inspector, at each visit, for his approval and signature.

## READING AND LITERATURE.

Silent reading is used to obtain ideas and thoughts through printed or written words—to comprehend the subject matter as a whole and to grasp the significance of the parts, as well as to discover and appreciate beauties of thought and expression.

Oral reading is used to express these ideas and thoughts so as to be heard, understood and felt. It involves systematic training in the principal elements of expression—quality of voice, pitch, force, time, stress, inflection, emphasis, pause.

Supplementary reading is used to furnish additional reading matter; to provide reading collateral to the studies in nature, geography, history, literature, etc.; to cultivate a taste for good literature. Its use is optional.

Sight reading in silence is used to give power to glean thought quickly and intelligently from the printed page. It is followed by logical statement, in the pupil's own words, of what he has gleaned.

Selections of poetry and prose inculcating reverence, love of country, love of nature and admiration of moral courage are to be committed to memory and recited.

*Standard I.*

Authorised First Readers. Authorised Supplementary Readers.

*Standard II.*

Authorised Second Readers. Authorised Supplementary Readers.

*Standard III.*

Authorised Third Reader. Authorised Supplementary Readers.

*Standard IV.*

Authorised Fourth Reader. Authorised Supplementary Readers.

*Standard V.*

Authorised High School Reader. Authorised Supplementary Readers.

## ORTHOEPY AND SPELLING.

Much attention should be given to accurate pronunciation. Pupils of the third, fourth and fifth standards should have constant practice in finding the pronunciation and meaning of words from the dictionary.

Special drills should be given on such words as are in their nature difficult to spell, and such as have been frequently misspelled in compositions. Pupils should not be drilled on the spelling of words which they may seldom or never have occasion to use.

*Standard I.*

Part I Phonic analysis and synthesis, copying words, oral spelling.

Part II Phonic analysis and synthesis, oral and written spelling of such words in each lesson as the pupil can learn while mastering the reading matter, transcription, dictation, uses of capital letters and terminal punctuation marks.

*Standard II.*

Phonic analysis and synthesis; transcription: oral and written spelling of such words in each lesson as the pupil can learn while mastering the subject matter—words to be arranged so far as possible in groups according to the similarity in form; dictation; careful attention to spelling in all written exercises: uses of capital letters, terminal punctuation marks, quotation marks.

*Standard III.*

Careful attention to spelling in all written work; exercises as in previous standards; division of words into syllables and marking the accent; common abbreviations and contractions; simple synonyms.

*Standard IV.*

Exercises as in previous standards; a few helpful rules of spelling formulated inductively; meaning of common prefixes and suffixes.

*Standard V.*

Exercises as in previous standards. Derivation and composition of words, exercises being confined mainly to words which have an English primitive. (Consult "High School Grammar," Chap. IV, especially pp. 88—90, exercises 1—x.)

## COMPOSITION.

(a) Compositions should consist, almost entirely, of expressions of thoughts evolved in the teaching of such studies as geography, history,

agriculture, literature, etc. (b) Through progressive exercises, both critical and constructive, the pupils should be led to discover and apply the leading principles and maxims of expression. Only the most important errors should be corrected in any one composition.

*Standard I.*

Brief oral and written expression, in complete sentences, of simple thoughts suggested by observation of objects, animals, plants and pictures; narration of personal experiences; reproduction of the substance of the lessons in reading, etc.

*Standard II.*

(a) Brief oral and written description of observed objects, animals, plants and pictures; narration of personal experiences; reproduction of the substance of the lessons in reading, history, etc.; simple letter writing.

(b) Combining thoughts into a simple sentence: mechanics of a composition—heading, margins, etc.

*Standard III.*

(a) Correct oral expression of thoughts evolved in the teaching of all subjects; brief, accurate and legibly written expression of these thoughts; the paraphrase.

(b) Sentence structure in outline; use of the paragraph; forms for letters, accounts, and receipts; drill to correct the chief errors revealed in written expression.

*Standard IV.*

(a) Correct oral expression of thoughts evolved in the teaching of all subjects; brief, accurate and legibly written expression of these thoughts; the summary [abstract]; social and business letters.

(b) Sentence structure; paragraph structure in outline; drill to correct the chief errors revealed in written expression.

*Standard V.*

(a) Correct oral expression of thoughts evolved in the teaching of all subjects; rapid, accurate and legibly written expression of these thoughts; essay writing (themes).

(b) A systematic summary of the principles and maxims of expression previously discovered in practice; application of these in the correction of errors revealed in written expression; paragraph structure; pupils trained to criticise compositions in a methodical way.

GRAMMAR.

Grammar shows the structure of language. By revealing the rules of sentence building it helps the pupil in using correctly the forms of speech which the necessities of expression require. (Composition.)

Through the logical forms of subject, predicate and modifier it

reveals the essential nature of thought and is an aid to the more thorough understanding of reading lessons.

The teaching of formal grammar should be brought into close connection with the work in reading and composition. Routine parsing and minute analysis should be avoided.

*Standard I.*

Oral correction of colloquial errors.

*Standard II.*

Correction of colloquial errors; division of a sentence into subject and predicate.

*Standard III.*

Correction of errors in the language used by pupils. Kinds of sentences—assertive, interrogative, etc.; purpose of each. Parts of speech, phrases, clauses—their functions and places in sentences. General analysis as an aid in getting the ideas in a sentence, and learning what words and groups of words do in the expression of thought.

*Standard IV.*

Correction of errors in the language used by pupils. Kinds of sentences—simple, compound, etc.; purpose of each. Division of the parts of speech according to use; inflection in outline. General analysis used as a means of discovering the relation and position of ideas in a sentence.

*Standard V.*

An intelligent comprehension of the prescribed text book.

HISTORY.

Training of the moral judgment, and preparation for intelligent citizenship are important aims in teaching history. History should be associated with geography and literature—historical poems, etc.

*Standard II.*

*Canadian History.*—Lives of distinguished men described, e.g.: Columbus, The Cabots, Jacques Cartier, Champlain, Bishop Laval, Frontenac, La Salle, Montcalm, Wolfe, Sir Guy Carleton, Lyon Mackenzie, Papineau, Joseph Howe, Alexander Mackenzie, Sir John Macdonald, etc. Discussion of the chief excellences and defects in their characters to teach moral discrimination and, ultimately, to derive principles of conduct. Reading and reciting of patriotic poems.

*Standard III.*

*Canadian History.*—Outline study of leading features, e.g.: Discovery; exploration; struggle between the French and English

colonists; Treaty of Paris; Quebec Act; Constitutional Act; War of 1812; Rebellion of 1837; Union Act; Clergy Reserves; Land Tenures—Feudal, Freehold, Leasehold, Seigniorial: Reciprocity Treaty; British North America Act, etc.

*English History.*—Biography of persons honoured as types of state or individual life—e.g.: Caractus, Julius Caesar, (Arthur), Alfred, Canute, William I, Simon de Montfort, Edward I, Wolsey, Elizabeth, Charles I, John Hampden, Oliver Cromwell, Marlborough, Pitt, Nelson, Wellington, Lord John Russell, Victoria, etc. Discussion of their deeds to train moral judgment and incidentally to teach patriotism and civic duty. Reading and reciting patriotic selections.

In this standard the presentation is to be oral, no text book being prescribed. After the lesson, supplementary reading should be encouraged.

#### *Standard IV.*

*Canadian History.*—The text book studied as a review and expansion of the topics discussed in the previous standards.

*English History.*—Outline study of each people or period to exhibit its chief characteristics, e.g.: Saxons—a farmer people; brought with them the germs of our political institutions—a limited monarchy, parliament, courts of justice, personal holdings of land; gave us the body of our English tongue; became Christian from choice. The presentation of this outline is to be oral. Supplementary reading in history should be encouraged.

#### *Standard V.*

*Canadian History.*—An intelligent comprehension of the prescribed text; comparison of constitutional struggles in Canada with corresponding ones in England; outline study of how we are governed—parliamentary, judicial, municipal and school systems; our civic duties—voting, office-holding, tax-paying, support of law, etc.

*English History.*—The text book studied as a review and expansion of the topics discussed in previous standards. Grouping of the essential facts in each period under topics indicating phases of progress, e.g.: political, industrial, intellectual, æsthetic, religious—to show the growth of the nation.

### GEOGRAPHY.

#### *Standard I.*

*Direction:* Position of the sun in the morning, at noon, in the evening; cardinal points of the compass; location of important places and objects by pointing with the hand and naming the direction.

*Water:* Observation of forms of water such as clouds, fog, mist, rain, dew, frost, snow and ice as they occur to find the more obvious qualities and uses of each.

*Winds:* Recognition of calm, breeze, gale.



*Standard II.*

*Direction* : Semi-cardinal points of the compass ; observation of the directions of winds bringing heat, cold, rain, snow, moisture, dryness.

*Land* : Hills, mountains—direction and nature of their slopes ; plain, valley, prairie ; cape, peninsula, isthmus, island ; relation of these bodies to one another ; their uses. (Teacher's reference : " How to study Geography," pp. 145—159, etc.)

*Water* : Fuller study of clouds, fog ; mist, rain, dew ; snow, ice, hail ; as to uses and effects of each. Effects of sun and winds on these.

Spring, brook, river—source, banks, branches, mouth—lake ; bay, sea, strait ; relation of these bodies to one another ; their uses.

*Winds* : Calm, breeze, gale, storm, hurricane ; effects on land and sea, on plants, animals, people, vessels.

*Maps* : Construction of maps of school room, school grounds, neighbourhood ; map representation of geographical objects studied.

*The World as a Whole* : Outline study of its form, rotation, axis, poles, equator, hemispheres ; hot, temperate and cold parts.

*Continents* : Their relative positions and sizes ; characteristic animals and plants in each ; occupations, habits, dress and modes of life of the leading peoples in each.

*Oceans* : Their relative positions and sizes ; some characteristics of each.

*Standard III.*

*Land* : Mountain chains, slopes, great plains ; description and uses of each. (Teacher's reference : " How to study Geography," p. XXV and pp. 145-147.)

*Water* : River systems.

*Continent Structure* : Great slopes, continental axis, land masses, secondary axis, great river basins, great river systems, coast lines. (Teacher's reference : " How to study Geography," pp. 13-51 and 146-152.)

*The World as a Whole* : Relief—World ridge from Cape Horn to Cape of Good Hope.

Lowlands : World basins—their position between the two highlands of each continent. Outline description of each.

Drainage : World water parting ; world river systems.

Winds : Elementary ideas of causes and influences of trade winds, return trades, polar currents, monsoons. (Consult " Child and Nature," pp. 170-174.)

Ocean Currents : Elementary ideas of causes and influences of Gulf Stream, Japan Current and polar streams. (Consult " Child and Nature," pp. 174-176.)

Rainfall : Formation of clouds and rain ; places of much, little or no rain ; reasons.

Climate : Outline study of distribution of climates. (Consult " Child and Nature," pp. 178-181.)

Productions : Chief agricultural, grazing, lumbering, and mining regions. (Consult " Child and Nature," p. 185.)

People : The different races and their distribution.

## NORTH AMERICA.

(References for Teacher's use. Parker's "How to study Geography" pp. 185-218. King's "Methods and Aids in Geography," chapters XIII-XVI. "The Story of our Continent."—Shaler.)

*Position.*

*Structure* : General description of primary and secondary highlands, river basins.

*Drainage* : Great water-partings, great river systems, great lakes.

*Outline* : Shape, leading projections of land and water.

*Climate* : Temperature and moisture—their causes and influences generally.

*Natural Productions and Productive Regions* : Chief agricultural, grazing, lumbering and mining regions; surplus productions and exports; deficiency and imports.

*Waterways and Railways* : Noted trade routes.

*Cities* : Prominent commercial centres of the continent and their relation to belts of products.

*Political Divisions* : Their relation to the physical structure of the continent; capitals, forms of government, nationalities, state of civilisation.

*North-West Territories* : Studied generally as a review of a section of the continent; the agricultural, grazing, lumbering and mining regions; chief trade routes; about a dozen towns.

*Standard IV.*

*Dominion of Canada* studied as a review, with additions, of a section of the continent of North America. Same topics as for continent study. (Teacher's reference: "The Geography of the British Colonies," by Dawson and Sutherland.)

*South America*. Outline study comparing its structure, drainage, coastline, climate and productive regions with those of North America. Political divisions—mainly Brazil, The Argentine Republic and Chili. (Teacher's reference: "How to Study Geography," pp. 218-224. The "Geographical Reader"—American Book Company.)

*Eurasia*: (Europe and Asia.) General structure of Eurasia compared with that of North America and that of South America. (Teacher's reference: "How to study Geography," pp. 224-263.)

Europe. Under the same topics as North America. Comparisons.

Asia. Only a very general study of climate, natural productions and productive regions, trade routes, cities. Political divisions—mainly India, Japan and China. Comparisons.

*Standard V.*

*Africa and Australia*. Brief study of general structure; brief comparisons of main features with those of other continents.

*British Empire.*

Motions of the earth, day and night—reasons; latitude, longitude, tropics, polar circles, eclipses.

Heat, winds, ocean currents, tides, rainfall, dew, ice, glaciers, etc.

Distribution of soil, vegetation, animals, races of men, minerals; causes.

Great commercial centres of the world, great routes of commerce. (Teacher's reference: "How to study Geography," pp. 301-338; King's "Methods and Aids," chapters XVI-XVIII.)

#### NATURE STUDY AND AGRICULTURE.

(Teacher's reference books: Spalding's "Introduction to Botany," Newell's "From Seed to Leaf," Goodale's "Concerning a few Common Plants.").

To interest pupils in nature, to train them in habits of careful observation and clear expression, and to lead them to acquire useful knowledge are important aims in teaching this subject.

The pupil must study the plant, the animal and the soil rather than book descriptions of them. He may consult books after he has made his observations. The study of plant life should be emphasised in spring, though not restricted to that season.

This study should be connected with language, drawing and geography.

#### *Standard I.*

##### *Plant Life:*

Seeds: Bean, pea, sunflower, corn, wheat.

Germination: its conditions—light, air, moisture, soil, warmth.

Structure: covering, cotyledons, embryo.

Seedlings: Parts—stems, roots, leaves.

Buds: Poplar, willow, maple, elm, spruce.

Covering, unfolding, arrangement on stem.

*Animal Life:* Cat, dog, cow, horse, sheep, hen, fish.

Covering, food, uses.

#### *Standard II.*

##### *Plant Life:*

Seeds: Fuller study of the germination, growth and structure of seeds selected for Standard I.

Plant structure: Herbs, shrubs, trees.

Stem: Its parts—wood, bark, pith; their uses.

Root: Its parts—primary root, rootlets, root hairs; their uses.

Leaf: Its parts—stipules, stock, blade, veins; their uses.

Fruits: Apple, orange or lemon, plum or cherry, pumpkins or squash, raspberry or strawberry; the uses of their parts to the plant and to man.

*Animal Life:* Fuller study of the animals selected for Standard I, including structure of feet, head and teeth; relation of structure and habits.

#### *Standard III.*

##### *Plant Life:*

Leaves: Their position, arrangement, form and venation; their relation to sunlight, air, and direction of water to roots.

Flowers: Silverweed, anemone, rose, violet, everlasting pea, sunflower, wild bergamot; arrangement and uses of their parts.

Roots: Wheat, willow, carrot, turnip, radish, potato. Their forms, and the uses of their parts to the plant and to man.

*Soils*: Outline study of formation, composition, classification, exhaustion, restoration. (Public school "Agriculture" Chap. III.)

*Animal Life*: Ant, fly, grasshopper; hawk, crane, duck; gopher, wolf muskrat: Adaptation of their forms and structure to their modes of life.

*Standard IV.*

*Plants*: Their food—its sources, how taken up, how assimilated; their reproduction, propagation; dissemination of seeds.

Weeds: Bindweed or wild buckwheat, tumbleweed, hedge mustard, stinkweed, Russian thistle; methods of destroying. ("Agriculture," chap. XII.)

Trees: Their cultivation for shade, ornament and protection. ("Agriculture," chap. XIX.)

*Soils*: Preparation of, for seed. ("Agriculture," chap. VI.)

*Animals*: Feeding, care and management of horses, cattle, sheep and swine. ("Agriculture," chap. XIV.)

Insects: Growth, classification, remedies. ("Agriculture," chap. XII.)

*Standard V.*

*Tillage*: Drainage, fertilisers, subsoiling. ("Agriculture," chap. V.)

Crops: Their growth, management, rotation; diseases, remedies; soiling crops. ("Agriculture," chap. VII, VIII, IX, XI.)

*Animals*: Principles of feeding. ("Agriculture," chap. XIII.)

Dairying: ("Agriculture," chap. XVII.)

ARITHMETIC.

Every new thought process in this subject should be developed objectively. Principles and rules should be arrived at inductively. Accuracy and rapidity in the simple fundamental processes are important.

Problems should, so far as possible, have due relation to the demands of modern commercial and business life. Clearness of reasoning, accuracy of statement and elegance of form in the solution of problems should be emphasised. Pupils should have regular practice in the construction of problems. The subject matter of nature study, agriculture, geography, etc., furnishes interesting data for many problems.

*Standard I.*

(Teacher's reference: Wentworth's "Primary Arithmetic.")

*Part I.*

Numbers 1 to 12—their combinations and separations, oral and written: the making and use of arithmetical signs.

Making and showing relation of one-half, one-fourth, one-eighth; one-third, one-sixth; one fifth, one-tenth; one-third, one-ninth, one-twelfth; one-seventh; one-eleventh. (Objective illustration—no figures used.)

Use and relation of pint, quart, gallon, peck, bushel; inch, foot, yard; day, week, month, year; five cent and ten cent coins; simple problems.

*Part II.*

Numbers 1 to 25—their combinations and separations.

Use and meaning of one-thirteenth . . . . . one-twenty-fifth; review of fractions in Part I.

Use and relation of ounce, pound; hour, day; foot, rod; sheet, quire.

Counting to and from 25 by ones, twos, threes, etc. Drill in rapid figure work (especially in addition) involving combinations in the numbers 1 to 10. Reading Roman notation to XXV. Inventing and solving simple problems.

*Standard II.*

Teacher's reference: Wentworth's "Primary Arithmetic.")

Numbers 25 to 100. Addition, subtraction, multiplication and division.

Use and meaning of one twenty-sixth . . . . . one-one-hundredth. Addition, subtraction, multiplication and division of fractions studied in Part I.

Percentage: Use and meaning of 50%, 25%, 10%, 5%, 33 $\frac{1}{3}$ %, 12 $\frac{1}{2}$ %; relation to fractions.

Use and meaning of pound, bushel; square inch, square foot, square yard; finding area of small surfaces.

Counting to and from 100, by ones, twos, etc., to tens; multiplication table made and mastered. Oral and written drill in rapid figure work (especially in addition) involving the combinations in the numbers 1 to 25. Reading Roman notation to C. Inventing and solving simple problems suggested by any subject studied.

*Standard III.*

Notation and numeration; simple rules.

Common fractions: Addition, subtraction, multiplication and division of fractions whose denominators do not exceed one thousand. Common factor and common divisor as needed in fractions.

Decimal fractions: Addition, subtraction, multiplication and division of tenths, hundredths and thousandths; relation to common fractions.

Percentage: Easy problems in simple interest and profit and loss, using such applications as occur in ordinary mercantile business.

Remaining weights and measures used in practical life, taught and applied; measurement of surfaces and right angled triangles; contents of rooms, boxes, lumber, piles of wood and hay.

Oral and written drill in the figure work of the simple rules to secure accuracy and rapidity.

*Standard IV.*

Common fractions. Decimal fractions, omitting recurring decimals.

Simple interest, profit and loss, commercial discount, commission. Problems should be confined to cases occurring in ordinary mercantile business.

*Standard V.*

Ratio and simple proportion with their applications to partnerships; square root.

*Mensuration*: Chapters VII to IX, inclusive, in Hill's "Lessons in Geometry."

*Geometry*: Hill's "Lessons in Geometry."

At first, the pupil should discover geometrical truths through measurement, drawing construction and superposition rather than logical demonstration. In demonstrations, clearness of reasoning, accuracy of statement and elegance of form should be emphasised. "The subject matter of each lesson should be considered in its relation to life, *i.e.*, the actual occurrence, in nature and in the structures of machines made by man, of the geometrical forms studied; and the application of the propositions to the ordinary affairs of life should be the basis and the outcome of every exercise."

*Algebra*: First 100 exercises in Clarkson's "Public School Algebra."—Scholar's edition.

#### DRAWING (PROVISIONAL COURSE).

(Teacher's reference: The Prang Primary Course in Art Education—Parts I and II by Hicks and Locke).

Drawing is to be taught as an added means of expression. Pupils are to draw in blank books after observing the type solids and objects.

##### *Standard I.*

Teach the following forms as wholes from type solids and objects:

*Sphere* and similar forms, natural and artificial, *e.g.*, ball, marble, apple, tomato, cherry, lemon, etc.

*Cylinder* and similar forms, natural and artificial, *e.g.*, pencil, bottle, spool, pint measure, cup, rope, ladder, mallet, etc.

*Cube* and similar forms, natural and artificial, *e.g.*, box, chest, basket, inkstand, lump of sugar, etc.

Teach their parts—surfaces, faces, edges and corners and the relation of these parts. Compare them.

Illustrative sketching in connection with nature study.

##### *Standards II and III.*

The work of Standard I and the following:

The type solids bisected and studied as new wholes.

*Hemisphere* and similar forms, natural and artificial, *e.g.*, half an apple, dish, bowl, cap, oil can, etc.

*Half Cylinder* and similar forms, natural and artificial, *e.g.*, bandbox, coin, etc.

*Half Cube*, square prism, right angled triangular prism, and similar forms, natural and artificial, *e.g.*, box, trunk car, roof of a house, etc.

Teach their parts—surfaces, faces, edges and corners, and the relation of the parts. Compare them.

Teach geometric figures—triangle, square and rectangle from the solid.

Draw objects based on these figures, *e.g.*, pennant, envelope, door, cross, flag, etc.

Illustrative sketching in connection with nature study.

*Standards IV and V.*

The work of previous standards and forms derived from the type solids by variation.

*Spheroid*, ellipsoid, ovoid, and similar forms, natural and artificial, *e.g.*, lemon, cucumber, watermelon, egg, hops, pear, strawberry, vase, etc.

*Cone*, circular frustrum, and similar forms, natural and artificial, *e.g.*, carrot, volcano, mountain peak, hour glass, wine glass, etc.

*Pyramid*, square frustrum and similar forms, natural and artificial, *e.g.*, cupolas, pyramids of Egypt, basket, etc.

Draw, from the solids, the geometric figures, circle, ellipse, and oval, and learn the terms circumference, diameter, radius, arc, centre, focus, axis. Draw objects based on these figures, *e.g.*, target, circular window, hand mirror, eye glasses, horse shoe, padlock, fan, spoon, etc.

Illustrative sketching in connection with other studies.

## MUSIC (PROVISIONAL.)

*Standards I and II.*

Singing of rote songs ; drill on the scale and intervals—Normal Music Course First Reader, Part I.

*Standards III, IV and V.*

Normal Music Course First Reader. Second Reader when First is mastered.

## HYGIENE—PHYSIOLOGY.

(Teacher's reference : Ontario Manual of Hygiene or Ontario Public School Physiology and Temperance.)

For convenience in teaching these subjects the ungraded school may be divided into two sections, the first comprising the pupils in Standards I and II and the second those in Standards III, IV and V. Practical effect should be given to the instruction in this subject by attention to the physical condition and habits of the children, the ventilation, lighting, heating and cleaning of the school room, and the supervision by the teacher of the sports and gymnastic exercises of the pupils.

Topics : Lessons on cleanliness, proper clothing, pure air, good water, exercise, rest, avoidance of draughts, wholesome food, temperate habits, bathing, accidents, poison, disinfectants, digestion, circulation, respiration, care of the eye and ear.

STIMULANTS AND NARCOTICS WITH SPECIAL REFERENCE TO THE USE OF  
ALCOHOL AND TOBACCO

The great purpose is to build up in the mind a theory of self control and a willingness to abstain from acts that may grow into dangerous habits. The moral and social effects should be made prominent and abstinence be inculcated from higher ends than such as concern only the body. Technicalities and persistent dwelling upon details of disease should be avoided. Special delicacy of treatment is needed in those unfortunate cases in which children find themselves between the safe teaching

of the school and the counter practices and influences of the home. Refrain from assertions of what is uncertain or sincerely doubted by high authority, or likely to be repudiated by the pupil when he is mature enough to judge for himself, since the admitted and unquestioned facts about the more dangerous stimulants and narcotics, and alcoholic drinks in particular, furnish invincible reasons why people in general should do without them and young people above all others.

Teach what a stimulant is, what a narcotic is, what each may cause ; effects of alcohol on the digestive, circulatory, muscular and nervous system.

Teach that tobacco contains a poisonous substance called nicotine, that it frequently injures the throat, lungs, heart and other organs in adults, that it is far more harmful to young and growing persons than to adults, that it is particularly objectionable in the form of a cigarette, that children should avoid it in all its forms, and that the more sparingly grown people use it, the better, as a rule, they are off.

#### MANNERS AND MORALS.

(Teacher's reference : White's School Management, pp. 218-294.)

Ungraded schools may be divided as in hygiene when direct instruction is given.

It is the duty of the teacher to see that the pupil practices those external forms of conduct which express a true sense of the proprieties of life and that politeness which denotes a genuine respect for the wants and wishes of others. It is his duty to turn the attention of the pupils to the moral quality of their acts and to lead them into a clear understanding and constant practice of every virtue. His own influence and example ; the narration of suitable tales to awaken right feeling ; the memorising of gems embodying noble sentiments, and maxims and proverbs containing rules of duty ; direct instruction, etc., are means to be employed.

Topics : Cleanliness and neatness, politeness, gentleness, kindness to others, kindness to animals, love, truthfulness, fidelity in duty, obedience, nobility, respect and reverence, gratitude and thankfulness, forgiveness, confession, honesty, honour, courage, humility, self respect, self control, prudence, good name, good manners, temperance, health, evil habits, bad language, evil speaking, industry, economy.



## APPENDIX G.

## REGULATIONS GOVERNING TEACHERS' CERTIFICATES.

*Certificates.*

The teachers' certificates granted by the Council of Public Instruction shall be denominated Third Class, Second Class, First Class and High School certificates. These may be obtained by fulfilling the following conditions:

- (a) Furnishing a certificate of moral character of recent date.
- (b) Passing the prescribed non professional examination.
- (c) Passing the prescribed professional examination.
- (d) Receiving a satisfactory report from an inspector after having taught one year in these Territories on an interim certificate.

2. Certificates of the Third Class shall be valid for three years. All other certificates shall be valid during the pleasure of the Council.

## NON PROFESSIONAL EXAMINATION.

*THIRD CLASS.*

1. *Spelling and Writing*.—Judged on all papers.
2. *English Grammar and Rhetoric*.—A general knowledge of the High School Grammar. Choice of words, structure of sentences and paragraphs, simple forms of narration and description, punctuation.  
Text book.—Composition from Models (revised edition) pp. 1-206 and appendix.
3. *Composition*.—Short compositions on not more than three subjects based upon the selections in literature. It is not the extent of the candidate's knowledge about the selected subjects so much as his ability to say a few things about them in a simple, clear and orderly way, that is the test. Legible writing and correct spelling, punctuation and paragraphing will be regarded as indispensable.
4. *Prose Literature*.—The prescribed work is to be studied with reference to:
  - (a) Content: Outline of story, characters and leading events, pictures of life and manners, central idea and purpose of story.
  - (b) Method: (1) Structure of the plot; relation of characters and events to plot and purpose; climax; unity and coherence of details; how interest is sustained.
  - (2) Mode of telling the story.—By descriptions, direct or indirect narration, reflections, analyses of characters, motives and events.

(c) Language: General characteristics of the author's style.

(d) Place: Place of the work in literary history, circumstances of production, outline of the life of the author.

All details are to be considered not as ends in themselves but as means to a comprehension of the whole.

Prescribed work, 1902: Scott's "The Talisman."

Recommended for teacher's reference.—Edition by Bliss Perry, in Longman's English Classics.

5. *Poetical Literature*.—Intelligent comprehension of and familiarity with the prescribed selections; memorisation of the finest passages; oral reading.

Prescribed selections, 1902: Gage & Co's New Canadian Reader, Book V; "The Ancient Mariner," p. 75; "Ode to Duty," p. 197; "Character of The Happy Warrior," p. 199; "Life, Death and Immortality," p. 202; "To a Sky Lark," p. 229; "To the Cuckoo," p. 233; "Ode to the Nightingale," p. 235; "The Passing of Arthur," p. 247; "The Italian in England," p. 276; "The Lotos Eaters," p. 281; "Ulysses," p. 283; "The Sleeping Beauty," p. 306; "The Death of Wellington," p. 329.

6. *History*.—The leading events of Canadian and British History.

Text books.—Clement's History of Canada; Buckley and Robertson's High School History.

7. *Geography*.—The General geography—physical, commercial and mathematical—of the world; geography of Canada and the British Empire more particularly.

Text books.—The new Canadian Geography—North-West edition; Geography of the British Colonies by Dawson and Sutherland, McMillan & Co.

8. *Arithmetic and Mensuration*.—Pure Arithmetic; commercial arithmetic.

Text books.—Hamblin Smith's Arithmetic to the end of chap. XXVI; also chaps. XXXIII and XXXIV. For mensuration, consult Hill's Lesson's in Geometry, chaps. VII to IX inclusive.

9. *Algebra*.—Definitions, elementary rules, simple equations of one, two and three unknown quantities, problems, factors, H.C.F., L.C.M.

Text book.—C. Smith's Elementary Algebra, chaps. I to XI. inclusive.

10. *Geometry*.—Hill's Lessons in Geometry, chaps. I to VI inclusive. Euclid's Elements, Book I, with easy deductions—Todhunter and Loney's edition.

11. *Book-keeping*.—McLean's High School Book-keeping, chaps. I to V inclusive, and chaps. VIII to X.

12. *Botany and Agriculture*.—Elements of structural botany.

The course in third class botany shall be practical and descriptive, deal with plant functions and life relations, and cover the following:

The flower—its parts, their functions and relations as observed in the actual study of specimens of the following orders: Ranunculaceæ, Cruciferae, Leguminosæ, Rosaceæ and Liliaceæ.

The classification of members of these orders as to their genera.

The leaf in veneration, venation, phyllotaxis, surface, margin, outline, base, apex and function.

Aestivation—foliage buds, flower buds.

Inflorescence—determinate and indeterminate.

Flower—perfectness, completeness, symmetry, regularity.

The simple study of fruits and their classification as apocarpous and syncarpous, dehiscent and indehiscent.

The simple study of the root and stem, with drawings of cross sections and branch systems.

Pollination, fertilisation and the development of the seed from the ovule.

The study of modified branches, stems, leaves and flowers.

Germination, illustrating the growth of the seed and conditions.

Nutrition—food, digestion, assimilation, respiration and transpiration.

A plant shall be submitted at the examination, not necessarily for purposes of identification, but as a means of testing the candidate's practical knowledge of this subject. Simple drawings may be required.

Text book.—Spotton's High School Botany—Manitoba edition.

Books of reference for teachers—Coulter's Plant Relations (D. Appleton & Co.), Newell's Outlines of Lessons in Botany, part I (Ginn & Co.)

Agriculture.—Definitions, plants, soils, tillage, crops, weeds, insects, birds.

Text book.—The First Principles of Agriculture (Mills and Shaw), chaps. I to XII inclusive.

13. *Physics*.—The course in this subject shall cover the following:

(a) Metric and English systems of measures.

(b) Matter: Solid, fluid (liquid, gas), constitution of matter.

(c) Properties and laws of solids: Hardness, ductility, malleability, plasticity, cohesion, adhesion, elasticity, structure (crystalline and amorphous).

(d) Properties and laws of liquids: Fluidity; viscosity; cohesion; adhesion; capillary phenomena; surface tension; transmission of pressure by fluids; pressure due to weight; surface of a liquid at rest under the action of gravity; buoyancy.

(e) Properties and laws of gases: Pressure due to weight; expansive force (tension or elastic force); buoyancy; measurements of the pressure of the atmosphere, barometer; compressibility; Boyle's or Mariotte's Law.

(f) Construction and action of the following instruments and machines: Air pump (common and Sprengel), condenser, common pump, force pump, siphon, hydrostatic press.

(g) Specific gravity and density of a solid, liquid and gas.

(h) Relative motion and absolute rest.

(i) Force: Definition; recognition, manifestations, measurement; stress, action, reaction; molar and molecular forces; moment of a force; unit of force and mass.

(i) Energy: Definition; relation to force; various forms potential and kinetic.

Work: Definition; relation to energy and force; wasted work; unit; estimation of work done;

(j) Newton's Three Laws of Motion and their application to universal gravitation; equilibrium of bodies.

(k) Machines: Uses, advantages, laws; levers, balance, inclined plane, pulleys.

(l) Heat: Nature and sources; expansion of solids, liquids, gases;

measurement of heat; construction and use of thermometers; maximum density of water. Change of state—solid to liquid and liquid to solid; vaporisation and liquefaction; ebullition, evaporation, dew point. Transmission of heat—conduction, convection, radiation.

(m) Transformation, correlation and conservation of energy.

Text book.—Gage's Introduction to Physical Science.

14. *Drawing*.—(1) Representation: Drawing from type solids and objects. (a) The sphere and similar forms, natural and artificial, as a ball, apple, tomato, lemon, etc. (b) The cube and similar forms as a box, basket, inkstand, etc. (c) The cylinder and similar forms as a pencil, bottle, spool, pint measure, ladder, etc. (d) The type solids bisected—hemisphere, half cube, half cylinder, and similar forms.

(2) Object drawing: Sketching in connection with nature study, etc.

(3) Construction: Views, working drawings, designs, patterns.

(4) Decoration: Repetition around a centre, *e.g.*, rosette to cover a surface; along a line, *e.g.*, a border to limit a surface. Historic ornament—simpler forms.

Text book.—The Prang Course in Drawing for Ungraded Schools.

Reference book.—The Teacher's Manual for The Prang Course in Drawing for Ungraded Schools.

## SECOND CLASS.

1. *Spelling and Writing*.—Judged on all papers.

2. *English Grammar and Rhetoric*.—The High School Grammar—revised edition. Choice of words, structure of sentences and paragraphs, simple forms of narration, description and exposition, punctuation.

Text book.—Composition from models (revised edition) pp. 1-347 and Appendix.

3. *Composition*.—Short compositions on not more than three subjects based upon the selections in literature. It is not the extent of the candidate's knowledge about the selected subjects so much as his ability to say a few things about them in a simple, clear and orderly way, that is the test. Legible writing and correct spelling, punctuation and paragraphing will be regarded as indispensable.

4. *Prose Literature*.—The prescribed work is to be studied with reference to:

(a) Content: Outline of story, characters and leading events, pictures of life and manners, central idea and purpose of story.

(b) Method: (1) Structure of the plot; relations of characters, events and incidents to plot and purpose; climax; unity and coherence of details; how interest is sustained.

(2) Mode of telling the story: By descriptions, direct and indirect narration, reflections, analyses of characters, motives and events.

(c) Language: General characteristics of author's style. Use of words—Anglo Saxon or classical, short or long, specific or generic; characteristic sentence structure; paragraphing, sources of figures of speech; use of humour, pathos, etc.

(d) Place: Place of the work in literary history, circumstances of production, outline of the life of the author.

All details are to be considered not as ends in themselves but as means to a comprehension of the whole.

Prescribed work, 1901: George Eliot's "Silas Marner." Riverside Literature Series No. 83.

Recommended for teacher's reference.—Edition by Robert Herrick, in Longman's English Classics.

5. *Poetical Literature*.—Intelligent, appreciative comprehension of and familiarity with the prescribed selections; memorisation of the finest passages; oral reading.

Prescribed selection, 1902: Scott, "The Lay of the Last Minstrel."

6. *History*.—(a) British: Great Britain from the Revolution of 1688 to the present, with the outline of the previous periods of British History.

Text book.—Green's Short History of the English People.

(b) Canadian: Clement's History of Canada.

(c) General: Swinton's Outlines of the World's History (Sections I, II, III.)

7. *Geography*.—The commercial and physical geography of America and Europe. The geography of the British Empire.

Text books.—Geography of the British Colonies by Dawson and Sutherland. Elementary Physical Geography by R. S. Tarr (McMillan Co.).

8. *Arithmetic and Mensuration*.—Arithmetic in theory and practice, area and volume of rectilinear figures, circles, spheres, cylinders, cones.

Text books.—Hamblin Smith's Arithmetic. For mensuration refer to Thompson, Ballard and McKay's High School Arithmetic—Ontario series.

9. *Algebra*.—Definitions, elementary rules, simple equations of one, two and three unknown quantities, problems, factoring, highest common factors, lowest common multiples, fractions, equations with fractions, quadratic equations, simultaneous equation of the second degree, powers and roots, indices, surds.

Text book.—C. Smith's Elementary Algebra, chaps. I to XX, inclusive.

10. *Geometry*.—Euclid, Books I, II and III; deductions.

Text book.—Todhunter and Loney's Euclid.

11. *Book-Keeping*.—As for Third Class. (Candidates for Second Class who have passed the Third Class examination in these Territories since 1st January, 1893, are not required to take this subject.)

12. *Physics*.—The elements of physics.

Text book.—Gage's Introduction to Physical Science. (Ginn & Co.)

13. *Agriculture and Botany*.—Plants, soils, tillage, crops, weeds, insects, birds, feeding, care and management of animals, dairying, cultivation of trees.

Text book.—The First Principles of Agriculture, by Mills and Shaw. Botany.—Topics as for Third Class.

14. *Drawing*.—Topics as for Third Class.

## FIRST CLASS.

1. *Spelling and Writing*—Judged on all papers.
2. *The English Language*.—(a) Grammar and rhetoric. The High School Grammar, revised edition; Genung's Practical Elements of Rhetoric and the study in connection therewith of the following selections from Genung's Handbook of Rhetorical Analysis: 1, 2, 3, 4, 5, 7, 8, 9, 10, 11, 12, 13, 15, 16, 17, 18, 21, 22, 23, 24, 26. One paper.  
(b) Lounsbury's English Language, Part I, revised edition, and Gummere's Handbook of Poetics, the first six chapters. One paper.
3. *Composition*.—Short compositions on not more than three subjects based upon the selections in literature.
4. *Prose Literature*.—George Eliot's "Silas Marner." (See Second Class.)
5. *Poetical Literature*.—Shakespeare: "The Tempest," "The Merchant of Venice."  
Milton.—"L'Allegro," "Il Penseroso," "Comus," "Lycidas," "On his being arrived at the age of twenty-three," "To the Lord General Fairfax," "To the Lord General Cromwell," "To Sir Henry Vane the Younger," "On his Blindness." (Riverside Literature Series No. 72.)  
Scott.—"The Lay of the Last Minstrel."
6. *History*.—Swinton: Outlines of the World's History—(American Book Company.)  
Bagehot: The English Constitution—(Kegan, Paul, Trench & Co.)  
Bourinot: Constitutional History of Canada—(Dawson Bros., Montreal.)
7. *Biology*.—A practical examination, including tests with the microscope, shall be held in connection with this subject.  
Text book.—General Biology, Sedgwick and Wilson. (American Science Series—Henry Holt & Co.)
8. *Algebra*.—C. Smith's Elementary Algebra.
9. *Geometry*.—Books I, II, III, IV; definitions of Book V; propositions 1, 2, 3, A, 4, 33 of Book VI; deductions.  
Text book.—Todhunter and Loney.
10. *Trigonometry*.—Text book.—Plane Trigonometry and Tables—D. A. Murray (Longman's.)
11. *Chemistry*.—Text book.—Kirkland's Experimental Chemistry. (Gage & Co.)
12. *Botany and Agriculture*.—Elements of Structural Botany. (Candidates for First Class who have passed the Second Class Examination in these Territories since 1st January, 1895, are not required to take this subject.)  
Text book.—Spotton's High School Botany—Manitoba edition.  
The First Principles of Agriculture by Mills and Shaw.  
Reference.—Coulter's Plant Relations.
13. *Physics*.—The elements of Physics.  
Text book.—Gage's "Introduction to Physical Science."
14. *Drawing*.—Topics as for Third Class.

*Marks Required To Pass.*

Candidates must obtain at least 34 per cent. on each subject, and 50 per cent. on the total number of marks.

If any subject is divided for the purpose of examination, candidates must obtain at least 34 per cent. on each subdivision.

## PROFESSIONAL EXAMINATION.

(To be held at the close of the Normal School Session.)

*Third Class.*

1. *The Science of Education.*—The nature and aim of education, teaching and instruction; outline of helpful portions of mental science; application of the principles derived therefrom to teaching and government.

2. *The Art of Education.*—Methods of teaching each subject on the programme of studies for schools; school organisation; school management; school hygiene; duties of teachers and pupils as set forth in The School Ordinance and Regulations. Practice in teaching.

Text books.—Garlick's New Manual of Method, White's Elements of Pedagogy; Ontario Manual of Hygiene, chapters 1, 2, 3, 4, 5, 10, 11, 12, 13, 14, 15, 22; The Prang Course in Drawing for Ungraded Schools; The Normal Music Course First Reader, new and enlarged edition. (Silver, Burdett & Co.)

Candidates will be required during the second week of the session to pass an examination on Tilley's Methods in Teaching (Morang).

*Second Class.*

1. *The Science of Education.*—The nature and aim of education, teaching and instruction; psychology and ethics as the scientific basis of the art of education; their application to the development of the intellectual and moral powers.

2. *The Art of Education.*—Outlines of general method; application to the teaching of each subject on the programme of studies; school organisation; school management; school hygiene; school law; practice in teaching.

3. *The History of Education.*—Systems and theories of education; eminent educators.

Text books.—Dexter and Garlick's Psychology in the School Room (Longman's), Landon's Teaching and Class Management, White's School Management, The Report of the Committee of Five, Manual of Hygiene, School Ordinance, The Prang Course in Drawing for Ungraded Schools, The Normal Music Course First Reader, new and enlarged edition. Lectures.

References for History of Education.—Browning's Educational Theories and Quick's Educational Reformers (Appleton's Edition, 1891.)

Candidates will be required during the second week of the session to pass an examination on Fitch's Lectures on Teaching.

*First Class.*

1. *The Science of Education*.—Nature, form and limits of education ; development and training of man ; education values ; psychological and logical sequence of subjects ; general method.

2. *The Art of Education*.—Application of principles derived from the science of education to the teaching of each subject on the programme of studies ; school organisation ; school management ; school law ; practice in teaching.

3. *The History of Education*.—Systems and theories of education ; eminent educators.

Text books.—Rosenkranz' *Philosophy of Education*. Sully's *Handbook of Psychology* (Revised Edition), De Garmo's *Essentials of Method* (Revised Edition), Landon's *Teaching and Class Management*, White's *School Management*, Laurie's *Lectures on Linguistic Method*, Herbert Spencer's *Education*, Report of the Committee of Ten, The Prang Course in Drawing for Ungraded Schools, The Normal Music Course First Reader, new and enlarged edition.

Candidates in attendance will be required during the second week of the session to pass an examination on Fitch's *Lectures on Teaching*.

## HIGH SCHOOL CERTIFICATE.

*Head Master.*

1. To have the degree of Bachelor of Arts from some university in Her Majesty's Dominions, and

2. To have a professional certificate of the first class.

Persons holding a professional certificate of the first class, or a High School Assistant's certificate, obtained after a course at an approved school of pedagogy, may teach in a high school, but not as head master.

NOTE.—A certificate from a school of pedagogy is not valid as a licence to supervise or teach in other than high schools.

## GENERAL.

1. The examination of candidates for teachers' nonprofessional certificates shall commence on the first Monday of July in each year at such places as the Council of Public Instruction may announce.

2. No male under eighteen years of age, nor female under sixteen shall be allowed to write at these examinations.

3. Each candidate shall notify the Secretary of the Council of Public Instruction, not later than June 1st, of the class of certificate for which he is an applicant and the place at which he desires to write. Each such notice shall be accompanied by a fee of \$3.00.

4. Males under eighteen years of age, and females under sixteen, who desire to test their scholarship, may, upon payment of a fee of \$5.00, write with the candidates for teachers' nonprofessional certificates. A statement of the marks awarded will be given them, but this statement will not be accepted as the equivalent of a certificate when the age limit has been attained.

5. A nonprofessional certificate shall not be valid as a licence to teach.



6. The sessions of the Normal School shall be held as follows: For third class candidates—December 1st till February 28th; for second class candidates—September 1st till December 22nd; for first class candidates—September 1st till December 22nd.

Only those holding non professional certificates are admitted. Candidates failing to present themselves on the first day of the session forfeit their right to attend.

Candidates who have previously taken the training prescribed for second class are permitted to write on the final examinations for first class without attendance during the session.

Persons whose teaching has been favourably reported on by an Inspector, but whose Third Class Professional Certificates have expired, may, with the permission of the Council, renew these by passing the prescribed nonprofessional examination for Third Class and an additional examination based on Lloyd Morgan's *Psychology for Teachers* (Scribners) and Landon's *Teaching and Class Management*.

#### PERSONS ELIGIBLE WITHOUT EXAMINATION.

1. A person who holds a certificate, other than third class, issued since 1st January, 1886, in any province of the Dominion or in the British Islands, and presents (a) a statement from the Department of Education in his province that his certificate is still valid, (b) a certificate of moral character of recent date, (c) a certificate from his last inspector of having taught successfully, may receive a certificate of such class as the Council of Public Instruction may deem him entitled to.

2. Graduates in any university in Her Majesty's Dominions may, on the presentation of proofs of scholarship, character and age, receive non-professional certificates of the first class.

3. Persons holding certificates of educational value from institutions other than those mentioned may receive such certificates as the Council of Public Instruction may deem them entitled to.

#### PUBLIC SCHOOL LEAVING EXAMINATION.

The Public School Leaving Examination will be held towards the end of June or early in July at a date to be fixed by the Department. Teachers must notify the Department not later than June 1st of the number of candidates they will present. Applicants will write in their own schools. There is no fee for this examination.

The following is the limit of studies in the different subjects prescribed for the Public School Leaving Examination (Standard V):

*Poetical Literature.*—Intelligent comprehension of and familiarity with the following selections from Gage & Co's. New Canadian Reader, Book V, with memorisation of the finest passages: Dora, p. 13; The Little Midshipman, p. 23; Maud Muller, p. 41; Rosabella, p. 97; The Ride from Ghent to Aix, p. 113; On Horseback, p. 116; The English Language, p. 137; Thanatopsis, p. 169; King Robert of Sicily, p. 179; The Vision of Sir Launfal, p. 186; Lady Clara Vere de Vere, p. 193; The Tragedies of Birds' Nests, p. 205; The Birds of Killingworth, p. 216; The Blackbird, p. 228; The Country Gentleman, p. 267; The Brook, p. 294; The Mountain of Miseries, p. 335; Peace of Mind, p. 347; Canada and the United States, p. 360; A Song of Canada, p. 380.

*Composition*.—The structure of the paragraph and sentence; the abstract, paraphrase and theme; social and business letters. Candidates will be required to write a short composition on some familiar subject.

*History*.—The leading events of Canadian History with particular attention to events subsequent to 1841; the outlines of English History.

*Geography*.—The general geography of the world; geography of Canada more particularly.

*Algebra and Geometry*.—First 100 exercises in Clarkson's "Public School Algebra;" first six chapters in Hill's "Lessons in Geometry." For P. S. L. examination, candidates must provide themselves with ruler and compasses.

*Hygiene and Temperance*.—The topics named in the Programme of Studies.

*Orthoepy and Spelling*.

*Grammar*.

*Nature Study and Agriculture*.

*Arithmetic*.

*Mensuration*.—Areas as in Chapter VII, Hill's "Lessons in Geometry."

*Drawing*.—(1) Representation: Drawing from type solids and objects, (a) The sphere and similar forms, natural and artificial, as a ball, apple, tomato, lemon, etc. (b) The cube and similar forms as a box, basket, inkstand, etc. (c) The cylinder and similar forms as a pencil bottle, spool, pint measure, ladder, etc.

(2) Object Drawing: Sketching in connection with nature study, etc.

(3) Construction: Views, working drawings, designs, patterns.

(4) Decoration: Repetition around a centre, *e.g.*, rosette to cover a surface; along a line, *e.g.*, a border to limit a surface. Historic ornament—simpler forms.

Text book.—The Prang Course in Drawing for Ungraded Schools.

Reference book.—The Teacher's Manual for The Prang Course in Drawing for Ungraded Schools.

NOTE.—"The work in each Standard includes a review of the essentials in previous Standards."—*Extract from Programme*.

The marks for writing are awarded on the composition or letter in the composition paper.

Two marks are deducted for each mis-spelled word on the spelling paper and one mark for each mis-spelled word on the other papers.

Candidates must obtain at least 34 per cent. on each paper and 50 per cent. on the total in order to pass.

## APPENDIX H.

## TEXT BOOKS AUTHORISED FOR USE IN SCHOOLS.

*Standards I-V.*

*Readers : Ontario Series.*—First Reader (Part I, Part II), Second, Third, Fourth and Gage's New Canadian Reader, Book V.

*Dominion Readers.*—Optional for Roman Catholic Separate Schools—First Reader (Part I, Part II), Second Reader.

*Bilingual Series.*—Optional in schools where French is the vernacular—First Reader (Part I, Part II), Second Reader (Copp, Clark & Co.)

*Supplementary.*—Optional in all schools—Standard I, Part I: Appleton's First Reader; Part II, \*Sea-Side and Way-Side No. 1, \*Bass' Nature Stories for Young Readers (Plant Life), †Scudder's Verse and Prose for Beginners No. 59. Standard II: \*Sea-Side and Way-Side No. 2, †Fables and Folk Stories Parts I and II, Nos. 47, 48. Standard III: \*Sea-Side and Way-Side No. 3, †Selections from Child Life in Poetry, No. 70. Standard IV: †John Burroughs' Birds and Bees, No. 28, †Dickens' Christmas Carol, No. 57.

*Copy Books :* Gage's Practical System of Vertical Writing.

*Arithmetic :* Elementary Arithmetic by Kirkland & Scott, revised and enlarged edition (The W. J. Gage Co.)

*Algebra :* Clarkson's Public School Algebra (school edition).

*Geometry :* Hill's Lessons in Geometry. (Ginn & Co.)

*Grammar :* Goggin's new Elementary Grammar.

*Geography :* The New Canadian Geography. North-West Territories edition. (The W. J. Gage Co.)

*History :* Buckley and Robertson's History of England. Clement's History of the Dominion of Canada.

*Agriculture :* Agriculture by C. C. James (Geo. N. Morang.)

*Music :* Normal Music Course, First and Second Readers, revised and enlarged; First Series of Charts, Second Series of Charts (Silver, Burdett & Co.)

*Drawing :* The Prang Course in Drawing for Ungraded Schools.

*Recommended as References for Teachers.*

*Geography :* Parker's How to Study Geography, King's Methods and Aids in Geography, Fry's Child and Nature, Shaler's The Story of our Continent, Dawson and Sutherland's The Geography of the British Colonies.

*Nature study and agriculture :* Newell's From Seed to Leaf, Goodale's Concerning a Few Common Plants, Grant Allen's The Story of the Plants.

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\*D. C. Heath & Co., Boston.

†Houghton, Mifflin & Co., Riverside Literature Series, Boston.

*Arithmetic*: Wentworth's Primary Arithmetic.

*Drawing*: The Prang Primary Course in Art Education

*Hygiene and Physiology*: Ontario Manual of Hygiene, Public School Physiology and Temperance.

*Manners and Morals*: White's School Management.

*Standards VI-VIII.—(High School Standards.)*

*Grammar*: Seath's High School Grammar (Revised Edition), Lounsbury's English Language.

*Composition*: Welsh's English Composition, Genung's Outlines of Rhetoric and Practical Elements of Rhetoric, Genung's Handbook of Rhetorical Analysis.

*Literature*: Poetical.—Prescribed selections for each Standard.

Prose.—Prescribed selections for each Standard.

*History*: English.—Buckley's and Robertson's History of England and Green's Short History of the English People.

Canadian.—Clement's History of the Dominion of Canada.

General.—Swinton's Outlines of the World's History.

Constitutional.—Bagehot's The English Constitution and Bourinot's Constitutional History of Canada.

*Geography*: Dawson and Sutherland's Geography of the British Colonies, Tarr's Elementary Physical Geography, The New Canadian Geography (North-West Territories edition).

*Mathematics*: Hamblin Smith's Arithmetic, C. Smith's Algebra, Todhunter & Loney's Elements of Euclid, D. A. Murray's Plane Trigonometry and Tables, McLean's High School Book-keeping.

*Science*: Spotton's High School Botany—Manitoba Edition, Gage's Introduction to Physical Science, Kirkland's Experimental Chemistry, Sedgwick and Wilson's General Biology, "The First Principles of Agriculture," Mills & Shaw.

*Classics*: Henderson and Fletcher's First Latin Book.

*Moderns*: High School French Grammar, High School German Grammar.

NORMAL SCHOOLS.

Local Normal Schools. (Third Class.) Garlick's New Manual of Method's with Appendix, Tilley's Methods in Teaching School Ordinance and Regulations, Ontario Manual of Hygiene.

The Normal School. (Second Class.) Dexter and Garlick's Psychology in the School Room, Landon's Teaching and Class Management, White's School Management, The Report of the Committee of Five, Ontario Manual of Hygiene, School Ordinance and Regulations; and Browning's Educational Theories and Quick's Educational Reformers as references; Fitch's, Lectures on Teaching.

(First Class.) Rosenkranz' Philosophy of Education, Sully's Handbook of Psychology (Revised Edition), De Garmos' Essentials of Method (Revised Edition), Landon's Teaching and Class Management, White's School Management, Laurie's Lectures on Linguistic Method, Herbert Spencer's Education, Report of the Committee of Ten, Fitch's Lectures on Teaching.

In all classes, Drawing and Music as for Public School Standards.

APPENDIX I.  
TOWN DISTRICTS, 1901.

NO.	NAME OF DISTRICT.	DEPTS.	PRINCIPAL.	CERTIFICATE	SALARY	ENROLMENT
1	Moose Jaw .....	7	Augustus H. Ball, B.A.	1	\$1,000	453
2	Qu'Appelle .....	3	A. E. Fisher, B.A. ....	1	800	190
3	Prince Albert .....	6	Charles Nivins, B.A. ...	1	1,000	320
4	Regina .....	9	J. B. Hugg, B.A. ....	1	1,050	399
7	Edmonton .....	9	John Ross, B.A. ....	1	1,200	498
10	P. Albert East .....	2	A. McDonald .....	1	800	99
12	Moosomin .....	6	C. H. Lee, B.A. ....	1	1,000	305
19	Calgary .....	14	J. F. Boyce, B.A. ....	1	1,300	825
25	Wolseley .....	3	J. F. Middlemiss .....	1	810	138
47	Macleod .....	3	A. E. Torrie .....	1	1,000	173
49	Indian Head .....	4	J. J. Currie .....	1	750	233
51	Lethbridge .....	7	J. McCaig, B.A. ....	1	1,200	362
57	Whitewood .....	3	A. J. Mather, B.A. ....	1	700	135
76	Medicine Hat .....	9	W. H. Gee .....	1	1,100	443
104	Red Deer .....	2	Jas. Turnbull .....	1	660	126
159	Yorkton .....	4	J. A. Gregory .....	1	800	205
216	Strathcona ..	7	D. S. McKenzie .....	1	1,080	452
457	Cardston .....	4	M. Eugene Sly .....	1	750	336

*Roman Catholic Separate.*

1	Lacombe (Calgary) .....	4	Rev. Sr. Greene, BA..	1	500	249
6	Prince Albert .....	2	Maggie M. McKinley ..	1	600	128
7	St. Joachim (Edmonton).	4	Rev. Sr. Quigley .....	1	700	191
8	Holy Cross (Macleod) ..	1	Frank Mugan .....	2	540	51
9	Lethbridge .....	3	Rev. Sr. McCormack ..	1	700	162
12	St. Anthony (Strathcona)	1	Rev. Sr. Corish .....	2	600	82
13	Graton (Regina) .....	2	Lewis L. Kramer .....	2	500	130

## APPENDIX J.

## SCHOOL DISTRICTS ERECTED 1901.

*Assiniboia.*

NAME	NO.	DATE OF ERECTION	GENERAL LOCATION			SECRETARY
			Tp.	Rg.	M.	
Union . . . . .	582	Feb. 11.	6, 7	3	2	C. Messer, Dalesboro'
Granton . . . . .	583	Feb. 13.	6, 7	26	2	J.W. Thoroughgood, M. Jaw
Ten Mile . . . . .	587	Mar. 13.	5, 6	28	3	D. L. Gaff, Coulee
Little Plume . . . . .	590	Mar. 13.	5, 6	29	3	E. Peachey, Woolchester
Petrolea . . . . .	591	Mar. 25.	9, 10	5	4	Thos. Scott, Moose Jaw
Arthur . . . . .	593	Mar. 25.	9, 10	6	4	
Milestone . . . . .	595	April 4.	16	25	2	A. J. Watson, Oxbow
Rouleau . . . . .	596	April 17.	16	26	2	W.H. England, Milestone
Carlton . . . . .	597	April 17.	12	19	2	D.A. Kingsbury, Rouleau
Dongola . . . . .	603	April 26.	14	21	2	Henry Roberts, Carlyle
Grand Coulee . . . . .	604	May 9.	14	22	2	
Manor . . . . .	605	May 9.	7	2	2	Thos. Moore, Dongola
Kipling . . . . .	612	June 15.	7	3	2	W. S. Lane, Regina
Frieden . . . . .	613	June 15.	18, 19	28	2	Fred. H. West, Manor
Cobourg . . . . .	614	June 15.	18, 19	29	2	G. H. Stinson, Caron
Scout Hill . . . . .	617	June 27.	17	15	2	Wm. Gow, South Qu'Appelle
McPherson . . . . .	618	July 4.	17	16	2	
Ladysmith . . . . .	619	July 4.	16, 17	26	2	G. A. Webb, Moose Jaw
Redvers . . . . .	623	Aug. 5.	16, 17	27	2	W.J. Morrison, Boscurvis
Drinkwater . . . . .	624	Aug. 5.	1	2	2	Wm. Rollins, Grenfell
Millions . . . . .	625	Aug. 8.	17, 18	7	2	L. A. Thomson, Balgonie
Oatlands . . . . .	632	Aug. 31.	17, 18	17	2	E. C. Wheeler, Redvers
			17, 18	18	1	A. Hockney, Drinkwater
			7	31	1	Geo. Melton, Carnduff
			7	32	1	J. H. Fry, Fry's

## SCHOOL DISTRICTS ERECTED, 1901.

*Assiniboia.*—Continued.

NAME	NO.	DATE OF ERECTION	GENERAL LOCATION			SECRETARY
			Tp.	Rg.	M.	
Freeman.....	634	Sept. 16.	27 27	1 2	2 2	Jas. Z. Walters, Yorkton
Arcola.....	637	Oct. 8...	8	4	2	J. E. Jamieson, Arcola
Fernley.....	639	Oct. 7...	10, 11 10, 11	1 2	2 2	Alex. Dallas, Glen Adelaide
Willmar.....	649	Dec. 6...	6 6	5 6	2 2	H. H. Mills, Arcola
North Weyburn	654	Dec. 27.	9	14	2	L. W. Grey, Weyburn
Bethel.....	655	Dec. 27..	2, 3	7	2	Wm. Walkom, Estevan
Golden Ridge..	656	Dec. 30..	13	4	2	Jas. Keith, Fitzmaurice

*Alberta.*

North Star.....	577	Jan. 10..	39 39	24 25	4 4	H. Baur, Haynes
New Berlin...	578	Jan. 10..	45, 46	22	4	E. W. Keeler, Battle River
Lone Pine.....	579	Jan. 10..	33 33	1 29	5 4	T. R. Tribe, Olds
Panama.....	581	May 23..	20, 21	1	5	T. J. Thompson, Okotoks
Caldwell.....	584	Feb. 21..	2, 3 2, 3	27 28	4 4	D. H. Caldwell, Jr., Caldwell
Roseland.....	585	Mar. 1...	46, 47 46, 47	22 23	4 4	A. T. Womacks, Wetaskiwin
Nebraska.....	586	Mar. 1...	41 41	23 24	4 4	G. H. de Groff, Ponoka
Chapel.....	588	Mar. 13..	41, 42 41, 42	1 2	5 5	John R. Craig, Bentley
Seafeld.....	589	Mar. 13..	42 42	25 26	4 4	J. W. Christie, Ponoka
Big Rock.....	592	April 4..	20	1	5	J. J. Moloney, Okotoks
Brookfield...	594	April 17.	38 38	25 26	4 4	M. Boomer, Lacombe
Waterloo.....	598	April 23.	30	2	5	S. C. Cressman, Carstairs
Eclipse.....	600	April 25.	39, 40 39, 40	24 25	4 4	Wm. Sharp, Lacombe
Spring Valley..	601	April 25.	39, 40 39, 40	25 26	4 4	G. W. Walker, Lacombe
Hackberry.....	606	May 9...	44	20	4	R. O. Standal, Duhamel
Pleasant Hill..	607	May 16..	41, 42	26	4	Jas. Riddoch, Morningside
Elk Horn.....	608	May 29..	41, 42 41, 42	26 27	4 4	E. E. Matthias, Lacombe
Lucas.....	609	May 30..	46, 47 46, 47	23 24	4 4	C. V. Wolverson, Wetaskiwin

## SCHOOL DISTRICTS ERECTED, 1901.

*Alberta.*—Continued.

NAME	NO.	DATE OF ERECTION	GENERAL LOCATION			SECRETARY
			Tp.	Rg.	M	
Hillsdale . . . . .	611	June 10..	52 52	22 23	4 4	W. R. Ball, Strathcona
Rosenroll . . . . .	616	June 21..	46 46	21 22	4 4	A. W. Hazelwood, Duhamel
Magrath . . . . .	620	July 9..	5	22	4	A. Mercer, Magrath
Oliver . . . . .	622	July 12..	51, 52	24	4	J. E. Hall, Strathcona
Bellevally . . . . .	626	Aug. 25..	56 56	26 27	4 4	Jacob Van Well, Riviere Qui Barre
Blairmore . . . . .	628	Aug. 24..	7, 8	4	5	H. E. Lyon, Blairmore
Frank . . . . .	629	Aug. 24..	7, 8 7, 8	3 4	5 5	Kenneth Langdon, Frank
Ferry Bank . . . . .	630	Aug. 24..	43, 44 43, 44	26 27	4 4	O. L. Webster, Ponoka
Bittern Lake . . . . .	631	Aug. 24..	47	21	4	W. W. Treleaver, Bittern Lake
Wolfville . . . . .	633	Aug. 31..	40 40	27 28	4 4	A. W. Archibald, Lacombe
Hopedale . . . . .	636	Sept. 24..	38, 39	24	4	J. H. Cunliffe, Haynes
Clearview . . . . .	638	Oct. 7..	37, 38	27	4	Jas. A. Youmans, Red Deer
Stephenson . . . . .	640	Dec. 21..	40 40	1 2	5 5	Wm. H. Garries, Bentley
Bloomfield . . . . .	641	Oct. 29..	55	19	4	W. J. Hackett, Star
Carstairs . . . . .	642	Oct. 29..	29	30	5	Alex. Sheriffs, Carstairs
Grand Centre . . . . .	643	Nov. 1..	30, 31	1	5	T. A. White, Didsbury
Kensington . . . . .	644	Nov. 11..	44	21	4	A. L. Haney, Lewisville
Sandy Lake . . . . .	645	Nov. 16..	51 51	23 24	4 4	G. Andrews, Strathcona
Yarrow . . . . .	646	Nov. 16..	4 4	28 29	4 4	Arthur Shead, Yarrow
Galt . . . . .	647	Nov. 19..	6 6	19 20	4 4	T. R. Faddis Stirling
Springside . . . . .	648	Dec. 6..	31, 32 31	2 28	5 4	A. McNaughton, Didsbury
Gore . . . . .	650	Dec. 17..	31 31	29 1	4 5	Jas. Burns, Didsbury
Dried Meat Lake . . . . .	651	Dec. 21..	44, 45 44, 45	19 20	4 4	L. Salway, Duhamel
Didsbury . . . . .	652	Dec. 27..	31 31	1 2	5 5	L. O. Snyder, Didsbury
York . . . . .	653	Dec. 27..	29, 30 29, 30	28 1	4 5	Geo. Charlton, Carstairs
Stone . . . . .	657	Dec. 30..	38, 39 38, 39	23 24	4 4	C. E. Stone, Lacombe
Chorest . . . . .	51	July 15..	50	23	4	C. J. Dubord, Beaumont



## SCHOOL DISTRICTS ERECTED, 1901.

*Saskatchewan.*

NAME	NO.	DATE OF ERECTION	GENERAL LOCATION			SECRETARY
			Tp.	Rg.	M	
Carson.....	580	Feb 11..	41, 42	6	3	T. J. Jansen, Rosthern
Osborne.....	602	April 25.	46	26	2	T.A.T. Adams, Red Deer Hill
Windom.....	615	June 21..	42	6	3	J. Peters, Rosthern
Macalister ....	621	July 10..	44, 45	17	2	J. A. McDonald, Melfort
Hoffnungsort. .	635	Sept. 16..	41, 42	3	3	A. Buhler, Hague
			41, 42	4	3	

*Separate School Districts.**Alberta.*

Sacred Heart...	15	Oct. 7...	46	23	4	A. Rehaume, Wetaskiwin
			46	24	4	

*Unorganised Districts.**Assiniboia.*

Little Boggy Ck .... .....	29	31	1	Josef Schindler, Crowstand
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*Saskatchewan.*

The Pas..... .... .....	55	26	1	Jos. Courtney, The Pas
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*Alberta.*

Laggan..... .... .....	28	16	5	Paul Elcombe, Laggan
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## APPENDIX K.

## EXAMINATIONS 1901.

## PUBLIC SCHOOL LEAVING.

*Literature.**Time—Two and one-half hours.*

## A.

O strong soul, by what shore  
 Tarriest thou now? For that force  
 Surely, has not been left vain!  
 Somewhere, surely, afar,  
 In the sounding labour-house vast 5  
 Of being, is practis'd that strength,  
 Zealous, beneficent, firm!  
 Yes, in some far-shining sphere,  
 Conscious or not of the past,  
 Still thou performest the word 10  
 Of the Spirit in whom thou dost live—  
 Prompt, unwearied, as here!  
 Still thou upraisest with zeal  
 The humble good from the ground,  
 Sternly represses the bad! 15  
 Still, like a trumpet, dost rouse  
 Those who with half-open eyes  
 Tread the border-land dim  
 'Twixt vice and virtue; reviv'st  
 Succorest!—this was thy work, 20  
 This was thy life upon earth.

1. (a) In a few well-chosen words tell what thought the author wishes to convey in the above lines:

(b) What is implied in the question in lines 1-2?

(c) "Conscious or not of the past." Give the grammatical relation of this phrase, and explain its significance.

(d) Give a concise and accurate interpretation of lines 13-19 ("Still thou upraisest" . . . and virtue.")

(e) Give the exact import of the following words as used in the extract: "tarriest" (line 2), "surely" (line 3), "sounding" (line 5), "beneficent" (line 7), "far-shining" (line 8), "half-open" (line 17), "Yes" (line 8).

(f) "like a trumpet" (line 16). Explain this simile and justify its use.

2. "In truth!" cried Francis, "rightly done!" and he rose from where he sat.

"No love," he cried, "but vanity sets love a task like that." Give a brief account of the incident which occasioned this speech.

3. In "Break, Break, Break," show how "Nature serves as a mirror for intense feeling."

4 Great things were ne'er begotten in an hour;  
Ephem'rous in birth are such in life;  
And he who dareth, in the noble strife  
Of intellects, to cope for real power,—  
Such as God giveth as His rarest dower 5  
Of mastery, to the few with greatness rife,—  
Must, ere the morning mists have ceased to lower  
Till the long shadows of the night arrive,  
Stand in the arena. Laurels that are won,  
Pluck'd from green boughs, soon wither; those that last 10  
Are gather'd patiently, when sultry noon  
And summer's fiery glare are past.  
Life is the hour of labour; on Earth's breast  
Serene and undisturb'd shall be thy rest.

(a) What is the theme of this sonnet?

(b) Explain carefully the meaning of lines 9-12 ("Laurels that are won . . . are past.")

(c) Give the meaning of the following words: "Ephem'rous" (line 2), "cope" (line 4), "dower" (line 5), "rife" (line 6), "arena" (line 9).

(d) Show in what relation the last two lines stand to the rest of the sonnet.

5. From what poem is each of the following passages taken, and who is the author?

(a) Nothing is fair or good alone.

(b) Thou art to me but as a wave of the wild sea.

(c) The tender grace of a day that is dead  
Will never come back to me.

(d) Some of us strive not without action to die fruitless.

(e) Skilful artists thou employest,  
And in charest beauty joyest.

(f) Did ever on painter's canvas live  
The power of his fancy's theme?

#### B.

Maggie was not conscious of unusual merit, but it was enough that Tom called her Magsie, and was pleased with her. There was nothing to mar her delight in the whispers and the dreamy silences, when she listened to the light dipping sounds of the rising fish, and the gentle rustling, as if the willows, and the reeds, and the water had their happy whisperings also. Maggie thought it would make a very nice heaven to sit by the pool in that way and never be scolded. She never knew she had a bite till Tom told her, but she liked fishing very much.

1. In a phrase give a suitable subject for this paragraph.
2. Tell briefly the incident which forms the basis of the extract.
3. From your knowledge of the lesson tell how Tom and Maggie regarded each other.
4. What is the author's object in describing this "childhood" scene?
5. What is the real significance of the last sentence?
6. Explain the following: "conscious of unusual merit," "tench," "awful Aegre," "hips and haws," "blue-eyed speedwell," "dreamy silences."

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*Grammar.*

*Time.—Two hours.*

1. Classify sentences according to the form of the thought expressed. Give an example of each.
2. What is meant by the term "part of speech"? Using the words "plant," "light" and "daily" show that these may be used as different parts of speech.
3. Classify adverbs according to their meaning. Refer each of the following to its proper class: seldom, thence, how, probably, consequently.
4. Distinguish "participles" and "gerunds," and by means of sentences show their service in composition.
5. What is meant by "derivation" and "composition" as applied to word-formation? How are derivatives generally formed? Give a few examples to illustrate your answer.
6. Name the interrogative pronouns. State clearly the facts to be noted in using them.
7. Write sentences containing:
  - (a) A noun in apposition.
  - (b) A noun in the adverbial objective.
  - (c) A personal pronoun of the first person, used as an indirect object.
  - (d) The possessive plural of "child."
  - (e) Subjunctive mood, past tense, third person, of the verb "be."
8. "The buyer came  
 And roughly struck his palm upon his breast,  
 And touched his unhealed wounds, and with a sneer  
 Passed on; and when, with weariness o'erspent,  
 He bowed his head in a forgetful sleep,  
 The inhuman soldier smote him, and, with threats  
 Of torture to his children, summoned back  
 The ebbing blood into his pallid face."  
  - (a) Classify this sentence.
  - (b) Pick out all the prepositional adverbial phrases in this extract and state clearly their relation.
  - (c) Give from this extract three examples of verbs of the Old Conjugation and conjugate these verbs.
  - (d) Parse fully the following words:  
 Roughly (line 2), o'erspent (line 4), his (line 5), smote (line 6), with (line 6), back (line 7).

*Composition.**Time—Two hours*

1. Write a brief account (say twenty lines) of any one of the following : The Glove and the Lions, The Lord of Burleigh, Barbara Freitchie, any two scenes from David Swan.

2. (a) Make an outline for a composition, of at least four paragraphs, on any one of the following : Canada's part in the war in South Africa, William the Conqueror, Wolfe, a Prairie Fire, a Norweigan Fiord, a street in Tokio. Show clearly the central thought and main divisions of each paragraph.

(b) Show that continuity has been kept in mind.

3. Mr. Robert Hall, Moose Jaw, advertises in the Calgary "Telegram" for a man to do general work on his farm. Wages, \$25 per month and board.

(a) Write the advertisement.

(b) Write an application for the position from Richard Cobb, Innisfail.

4. Point out the defects in the following sentences and correct each :  
I have no more control over him than others.

Robert promised his father that he would pay his debts.

The Rev. Henry Smith is about to resign the pastoral charge of the people to whom he has so long ministered to their great regret.

5. Write a paraphrase of the following:

Vice is a monster of so frightful mien,  
As, to be hated, needs but to be seen;  
Yet seen too oft, familiar with her face,  
We first endure, then pity, then embrace.

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*Spelling and Orthoepey.**Time.—One hour.*

1. Write the passage dictated by the presiding examiner: High School Reader, page 125, "Is it possible . . . Parliament must interpose." (On an Address to the Throne)

(*This is not to be seen by the candidates. It is to be read to them three times—the first time to enable them to grasp the meaning, the second time to enable them to write the words, the third time for review. Candidates are not permitted to rewrite the passage.*)

2. Write sentences showing clearly the difference in meaning between: dual, duel; loose, lose; procede, precede; suit, suite; practise, practice; claim, assert, maintain; under, beneath.

3. Give three examples of each use of the following prefixes: "in" meaning *not*; meaning *into* or *in*. "dis" meaning *not*; meaning *apart* or *asunder*.

4. Divide the following words into syllables and mark the accent: donate, chastisement, abdomen, dynasty, extempore, genealogy, heinous, incomparable, jocund, zoology.

5. Show how the meaning of each of the following words is affected by changing the accent: consort, converse, entrance, refuse, conjure.

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*Geography.*

*Time.—One and three quarter hours..*

1. (a) Compare the eastern and western coast lines of North America as to length, regularity and ruggedness.  
 (b) What is the influence of each coast line on trade?  
 (c) State the advantages of an irregular coast line.
2. Compare the continental short slopes of South America and Africa as to fertility, animal life and occupations of peoples living on these slopes.
3. Name the islands of North America belonging to Great Britain and state their importance to the empire.
4. Name the countries bordering on the Mediterranean Sea. State the capital and the form of government of each.
5. (a) Draw a map of Canada showing the political divisions with their capitals, regions of little rainfall, fur, fish, flax, pulp, wood, petroleum and gas wells. Mention the markets and the manner of transportation of each product.
6. Name the chief exports and imports of Peru, India, Quebec, France, British Columbia, South Africa.
7. Locate each of the following and tell what it is noted for: Moscow, Battleford, Hong-Kong, Bosphorus, Sault Ste. Marie, Hammerfest, Crow's Nest Pass, Luzon, Malta.
8. (a) What are the conditions most favourable to the formation of deltas?  
 (b) Describe each of the general courses of a river from source to mouth.  
 (c) What causes the windings of streams?

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*History.*

*Time—Two hours.*

1. Compare feudalism as it existed in England after the Norman Conquest with feudalism as it existed in New France and show why in the one case the people were satisfied and in the other case dissatisfied.
2. What were the reasons that led to the passing of the Constitutional Act? Point out its chief defects. When and how were these defects remedied?
3. What parts of British North America entered into Confederation in 1867? What parts have since been added? Give the dates of their admission. What part is not in Confederation at the present time? Why does it prefer to remain outside?
4. What effect had the Roman occupation upon (a) the industries, (b) the mode of life of the Britons?

5. Write a brief note upon the progress of the people during the Plantagenet Period.

6. With what great events were the following persons connected : Langton, Wycliff, Tyler, Colet, Pym, Wilkes, Wilberforce ?

7. Discuss briefly (*a*) the industrial development, (*b*) the chief wars, (*c*) the extension of the empire, (*d*) important constitutional changes during the reign of Victoria.

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*Arithmetic and Mensuration.*

*Time—Two hours.*

1. (*a*) Solve:

$$(847)^3, \sqrt[3]{(687241)}.$$

(*b*) Simplify:

$$\frac{(0.075)^2 - (0.005)^2}{0.75 - 0.05}.$$

2. A and B enter into partnership for 2 years, A at first putting in \$2,500 and B \$3,000. At the end of 9 months A took out \$800 and B put in \$500; at the end of 2 years they had lost \$3,825. What was each one's share of the loss?

3. A merchant bought 70 bales of goods at \$36 per bale, but 10 bales were so injured that he sold them at 15 per cent. discount. At what price per bale must he sell the rest to make a gain of 20 per cent. on his purchase?

4. A room is 6 meters long and  $4\frac{1}{2}$  meters wide ; in the central part is a carpet 50 decimeters long and 35 decimeters wide; find the cost of painting the rest of the floor at 12 cents per square meter.

5. A field 88 rods long and 80 rods wide yields 75 bushels of oats to the acre. It requires 32 inches of twine to bind one sheaf and each bushel represents 10 sheaves. When twine costs 11 cents a pound and a mile of twine weighs  $8\frac{1}{2}$  pounds ; and the cost of binding this field of oats.

6. Make a problem in simple interest to illustrate the equation:

$$\text{Rate} = \frac{100 \times \text{Interest}}{\text{Time} \times \text{Principal}}$$

7. (*a*) What change in the volume of a cylinder is produced (i) by doubling its height ? (ii) by doubling its diameter ? (iii) by doubling both ?

(*b*) A circular plate of lead 8 inches in diameter and 2 inches thick is converted without loss into spherical shot each 0.05 inches radius. Find the number of shot.

8. A cubic inch of gold weighs 10 oz. How many ounces of gold will be required to make a gold ornament in the shape of a right pyramid 6 inches high with a square base each side of which is 3 inches?

*Algebra and Geometry.*

*Note.*—Candidates must obtain at least 34 per cent. on each section.

*Time*—Three hours.

## A.

1. Write the sum of  $ax+by+cz$ ;  $bx+cy+az$ ; and  $cx+ay+bz$  as concisely as possible.
2. In a division, the quotient was  $a^2+ab+b^2$ , the divisor was  $a^2-ab+b^2$ ; the remainder was 0.
  - (a) Find the dividend.
  - (b) Use your result to write the product of  $4a^2-6ab+9b^2$  and  $4a^2+6ab+9b^2$ .
3. Define Factor. Resolve into factors:
  - (a)  $a^2-13a-48$ .
  - (b)  $2a^2+3ab-2b^2$ .
  - (c)  $81a^4-16$ .
4. Show that  $(a-b+c)^2-(a+b-c)^2=4a(c-b)$ .
5. Solve the following:
  - (a)  $2x-[3-\{4x+(x-1)\}-5]=8$ .
  - (b)  $\frac{60-x}{14}-\frac{3x-5}{7}=6-\frac{24-3x}{4}$ .
  - (c)  $1\frac{1}{2}x+y=13$ ,  
 $x+1\frac{1}{2}y=12$ .
6. Sixteen boys agreed to contribute equally to purchase a football. Four failed to pay. Each of the other boys had to pay 10 cents extra. What did the ball cost?
  - (a) Give both an algebraical and arithmetical solution of the above problem.
  - (b) What distinguishes the one solution from the other?
7. The length of a room 10 feet high, exceeds its breadth by 5 feet. Five hundred square feet of paper are required to cover its walls. Find the length and breadth of the room.
8. An investor places \$13,000 at interest, partly at 4 per cent. and partly at 5 per cent., and his income is \$550. How much does he invest at each rate?

## B.

*Note*—Candidates are permitted to use ruler, compass and protractor.

1. (a) Explain what is meant in geometry by dimension, line, point.  
(b) The sum of two lines is AB; their difference is CD. Describe a square on the longer line. (Do not erase construction lines.)
2. Define an angle. Show whether an angle is an area. Without the use of the protractor find an angle of  $67\frac{1}{2}^\circ$ . (Do not erase construction lines.)
3. State the different theorems that show the equality of two triangles. Prove any one of these.
4. A man walked north-east from his home 12 miles, then due east, 12 miles, then south-west 12 miles, thence to his home in a straight line.



(a) Draw a figure showing his directions and distances. (Scale 1 inch equals 6 miles.)

(b) Find the number of degrees in each angle of this figure.

(c) Using instruments estimate the area of this figure.

(d) Find the direction and distance of his last walk.

5. Define a circle. What is the essential property of the circle? If the radius of a circle be  $3\frac{1}{2}$  feet, find its diameter, its circumference, and the side of a hexagon inscribed in it.

6. Draw two concentric circles, radii 6 feet and 10 feet respectively. From any point in the circumference of the inner draw a tangent to it. Produce this tangent till it becomes a chord of the outer circle.

(a) Find the length of this chord.

(b) What fraction of the area of the outer circle is the area of the inner?

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### *Nature Study and Agriculture.*

*Time—Two hours.*

(a) What are the conditions necessary for plant germination?

(b) Show that three of these conditions are necessary.

2. (a) How are the seeds of each of the following plants—*anemone*, *pea*, *apple*, *prairie rose*, *strawberry*, *French weed*, *potato*, *wild barley*—carried away from the parent plant?

(b) What becomes of seeds that do not grow?

(c) Why have plants so many seeds?

3. (a) Show how soil is formed from rock.

(b) What is meant by soil exhaustion?

(c) Of what use are plants and animals in the preparation of the soil for cultivation?

4. What is tillage? Explain at some length the benefits of ploughing, and of harrowing.

5. "The fact is good farmers are not troubled with weeds." Name two noxious weeds and tell how to destroy them.

6. Tell with reasons how the bill and feathers of wading birds differ from those of swimmers; birds of prey from scratchers. (Use drawings to illustrate your answer.)

7. Write a note on the care and feeding of milch cows; on the care of milk after it is obtained.

8. Write a note on the planting and care of a hedge of trees.

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### *Hygiene and Temperance.*

*Time—One and one-half hours.*

1. Under the following headings discuss the relation between clothing and health: (a) feet, (b) body, (c) chest, (d) head.

2. Account for the harmful effects of draughts.

3. What is quarantine? Explain why it may be enforced. Describe a mode of disinfecting a room in which there has been a patient ill with a contagious disease.

4. From the standpoint of health discuss the necessity for sweeping, scrubbing and properly lighting our houses.

5. Explain briefly the meaning and purpose of digestion, circulation and respiration. Mention how these processes may be abused and the danger of each abuse.

6. A boy takes rat poison (arsenic) by mistake. What can you safely do to relieve him till the doctor comes?

7. What is meant by intemperance? Give examples of intemperate habits and show why each should be avoided.

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### *Drawing.*

*Note.*—Drawing is to be freshhand except in questions 1 and 2. Each freshhand drawing should be about three inches high.

*Time*—One and one-half hours.

1. Draw the front and right end views of the square prism.
  2. Make a working drawing of a wooden box 4 feet long, 3 feet wide and 2 feet high. Lumber  $\frac{1}{2}$  inch thick. Scale an inch to a foot.
  3. (a) Draw the cube showing three faces.  
(b) Draw an ordinary travelling trunk.
  4. (a) Make a shaded drawing of the cylinder.  
(b) Draw a flower pot in its saucer.
  5. Draw a dictionary, partly open, standing on its end with its back towards the pupils. (Any large book will do.)
  6. Sketch from memory a group of anemone blossoms as you find them growing on the prairie.
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## TEACHERS' EXAMINATIONS, 1901.

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### NON PROFESSIONAL.

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#### THIRD CLASS.

#### *Poetical Literature.*

*Time*—Three hours.

Filled was Evangeline's heart with inexpressible sweetness,  
Touched by the magic spell, the sacred fountains of feeling  
Glowed with the lights of love, as the skies and waters around her.  
Then from a neighbouring thicket the mocking bird, wildest of singers,  
Swinging aloft on a willow spray that hung o'er the water,

Shook from his little throat such floods of delirious music  
 That the whole air and the woods and the waves seemed silent to listen.  
 Plaintive at first were the notes and sad; then soaring to madness  
 Seemed they to follow or guide the revel of frenzied Bacchantes.  
 Single notes were then heard in sorrowful, low lamentation; 10  
 Till having gathered them all, he flung them abroad in derision,  
 As when, after a storm, a gust of wind through the tree tops  
 Shakes down the rattling rain in a crystal shower on the branches.

1. (a) State accurately the connection of the above passage in poem.  
 (b) What object has the poet in view in these lines?  
 (c) Explain what is meant in lines 2-3.  
 (d) Justify the use of "shook" (line 6), "soaring" (line 8), and  
     "flung" (line 11).  
 (e) "frenzied Bacchantes." Explain the allusion.
  2. Show how in the foregoing stanza word painting has added to the picturesqueness of description.
  3. Briefly describe the meeting of Evangeline and Gabriel.
  4. Paraphrase the following:
    - (a) We see but dimly through the mists and vapours;  
     Amid these earthly damps,  
     What seem to us but sad funereal tapers  
     May be heaven's distant lamps.
    - (b) Let us then be up and doing  
     With a heart for any fate,  
     Still achieving, still pursuing,  
     Learn to labour and to wait.
    - (c) Art is long, and Time is fleeting,  
     And our hearts, though stout and brave,  
     Still, like muffled drums are beating  
     Funeral marches to the grave.
  5. Beneath these fruit-tree boughs that shed  
     Their snow-white blossoms on my head,  
     With brightest sunshine round me spread  
     Of spring's unclouded weather,  
     In this sequestered nook how sweet  
     To sit upon the orchard-seat!  
     And birds and flowers once more to greet,  
     My last year's friends together.  
     One have I marked, the happiest guest  
     In all this covert of the blest:  
     Hail to Thee, far above the rest  
     In joy of voice and pinion!  
     Thou, Linnet! in Thy green array  
     Presiding Spirit here to-day  
     Dost lead the revels of the May;  
     And this is thy dominion.
- (a) Give in a line or two the main impression which the poet is attempting to produce upon the reader in these two stanzas.
  - (b) Point out the means he employs to obtain this end,



3. Give the relation of Ulrica to the plot and purpose of this novel.
4. State the purpose of the chapter in which the fight between Gurth and the Miller is described.
5. In the scenes between Rowena and De Bracy, and Rebecca and the Templar at Torquilstone, which woman exhibits the higher traits of character? Give somewhat fully your reasons for your preference.
6. What differences have you noticed in the speech of any of the characters in this novel when affected by serious spiritual conflicts? Refer to instances in support of your answer.
7. (a) What purpose is served by having some of the characters in a novel appear in disguise?  
(b) Discuss, with illustrations, the effectiveness of disguise in "Ivanhoe." Is this a gain or a loss?
8. Write a historical note on the production of "Ivanhoe."

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*Grammar and Rhetoric.*

*Time—Two hours.*

A.

While yet he loitered on the spot,  
 It seemed as Ellen marked him not;  
 But when he turned him to the glade,  
 One courteous parting sign she made;  
 And after, oft the knight would say, 5  
 That not when prize of festal day  
 Was dealt him by the brightest fair  
 Who e'er wore jewel in her hair,  
 So highly did his bosom swell  
 As at that simple mute farewell. 10

1. In the above extract select the subordinate clauses, and state clearly the kind and relationship of each.
2. Select, and explain the relation of, each prepositional adjective phrase, and each prepositional adverbial phrase in the passage.
3. Explain clearly the grammatical functions and relations of: "while" (line 1), "it" (line 2), "after" (line 5), "fair" (line 7), "at" (line 10).
4. Explain what is meant by the terms "government" and "agreement." Tell how "him" is governed in lines 2, 3, and 7.
5. State the various functions of "that." Give its use in line 6, also in line 10.
6. What are "pronominal adjectives"? Give the various classes and subclasses of this group of adjectives.

B.

- (1) The sun gradually wheeled his broad disk down into the west.
- (2) The wide bosom of the Tappan Zee lay motionless and glassy,

excepting that here and there a gentle undulation waved and prolonged the blue shadow of the distant mountain. (3) A few amber clouds floated in the sky, without a breath of air to move them. (4) The horizon was of a fine golden tint changing gradually into a pure applegreen, and from that into the deep blue of the mid-heaven. (5) A slanting ray lingered on the woody crests of the precipices that overhung some parts of the river, giving greater depth to the dark-grey and purple of their rocky sides. (6) A sloop was loitering in the distance, dropping slowly down with the tide, her sail hanging uselessly against the mast; and as the reflection of the sky gleamed along the still water, it seemed as if the vessel was suspended in the air.

1. State the theme of the foregoing paragraph.
2. Has sentence (1) any special value as an introductory sentence? Explain.
3. Briefly tell the bearing of each successive sentence upon the theme.
4. Account for the order in which the several thoughts are presented.
5. Show specifically what devices in sentence-structure are made use of by the author.
6. What purpose is served by the introduction of the "idle sloop"?
7. What is the appropriateness of "wheeled," "floated," "lingered" and "loitered"?

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### *Essays.*

*Time—One and one-half hours.*

Write briefly—say three or four paragraphs—on three subjects selected from the list that follows. It is not the extent of your knowledge about the selected subjects so much as your ability to say a few things about them in a simple, clear, orderly and correct way that is the test.

1. One of the following :
  - (a) Description of Cedric the Saxon.
  - (b) Description of the single combat between the Disinherited Knight and Bois Guilbert during the first day's tourney at Ashby.
  - (c) Description of the manners of the Saxons and Normans as revealed in the dining halls at Rotherwood and the castle of Ashby.
2. Either of the following :
  - (a) Give in narrative form the substance of the conversation between Wamba, Cedric and Athelstane in the castle at Torquilstone.
  - (b) Give in narrative form the substance of the conversation between Rowena and Rebecca after the marriage.
3. Either of the following :
  - (a) Discuss: A moment of peril is often also a moment of open-hearted kindness and affection.
  - (b) Discuss: He that does good, having the unlimited power to do evil, deserves praise not only for the good which he performs, but for the evil which he forbears.

*Geography.**Time.—Two Hours.*

1. (a) How would you ascertain the difference in the longitude of two places, the difference in time being known?

(b) Explain the relation of longitude to time.

2. What are tides? Explain their cause, kind, occurrence and effects. Explain whether tides are possible in inland waters. Would tides occur if the earth did not revolve? Why?

3. (a) How does location affect the growth and prosperity of a commercial city? Illustrate your answer by reference to Winnipeg and Halifax. From the standpoint of location which city has promise of greater prosperity?

(b) Compare Hudson's Bay and the Gulf of St. Lawrence as commercial outlets to Canadian trade.

4. (a) Compare the general plan of drainage of South America with that of North America.

(b) Discuss the suitability of the Argentine as a country for immigration. As such how does it compare with the Canadian North-West Territories?

5. Sketch the second prairie steppe of the Canadian North-West Territories under the following heads: position, altitude, soil, rainfall, drainage, grazing, timber.

6. (a) Draw a map of North America showing four isothermal lines. Give reasons for the directions of these lines.

(b) Show the regions of fog, high tides, cyclones and chinook winds. Account briefly for each.

7. Locate and tell for what each of the following is noted: Andorra, Nome, Lipton, Zuider Zee, Golden Gate, York Factory and Tientsin.

8. Name the principal European peninsulas and state their importance politically and commercially.

*British and Canadian History.**Time.—Two hours.*

1. Compare New England and New France under the following heads: (a) mode of colonisation, (b) government, (c) treatment of Indians. State the effect of each of these upon military operations.

2. "Sir Guy Carleton was one of Canada's most able governors." Justify this statement.

3. Compare the causes of discontent in Upper and Lower Canada prior to the Union Act with the causes of discontent in England during the reign of Charles I.

4. Outline briefly the system of government under which we live.

5. Trace the development of Feudalism in England before the Norman Conquest.

6. What were the causes of the Peasants' Revolt (1381)? What did the people gain by it?

7. Sketch the industrial and political development of England during the nineteenth century.

*Arithmetic and Mensuration.*

*Time—Three hours.*

1. Simplify :

$$5\frac{1}{3} \text{ of } \frac{1}{1\frac{1}{3} + \frac{1}{2\frac{1}{4}}} \div \frac{4\frac{1}{5} + 5\frac{1}{4}}{4\frac{1}{4} + 3\frac{2}{3}}$$

2. A, B and C rent a farm for \$270. A puts 200 sheep on it, B 150, and C 100. After 6 months A sells  $\frac{3}{4}$  of his flock to C, and 3 months later B sells  $\frac{2}{3}$  of his to A. How much rent should each pay at the end of the year?

3. If a man sells a chest of tea at 70 cents a pound he gains \$7.00, but if he had sold it at 50 cents a pound he would have lost \$3.00. Find the weight of the chest of tea and the prime cost per pound.

4. What is the difference between the discount taken off a draft for \$500 at 90 days and discounted at 7 per cent., and the interest on the proceeds for 93 days at 7 per cent.?

Find the interest for 93 days at 7 per cent. on the amount of the discount taken off the draft.

5. An agent sells 1000 barrels of flour at \$5.50 per barrel and charges  $2\frac{1}{2}$  per cent. commission; the expenses for freight were \$500. With the net proceeds he buys sugar at  $6\frac{1}{4}$  cents a pound charging  $2\frac{1}{2}$  per cent. commission. How much sugar is bought? What is the total commission?

6. A man and a boy are to work alternate days at a piece of work which the boy could do alone in 13 days. If the boy takes the first day the work will be finished one-half day later than if the man commenced. How long will it take the man and the boy together to do the work?

7. A plate of metal is 106.58 inches long, 14.6 inches wide and 2 inches thick. Supposing it to be melted and cast into an exact cube, how long would the diagonal axis of the cube be?

8. How many kilograms in an iron dumbbell consisting of two spheres  $4\frac{1}{2}$  cm. in diameter joined by a cylindrical bar 6 cm. long and 2 cm. in diameter, when an iron ball 4 cm. in diameter weighs 500 grams?

9. A circular room has perpendicular walls 15 feet high; the diameter of the room is 28 feet; the roof is a hemispherical dome. Find  
(a) The cost of plastering the whole interior surface at 36 cents per square foot;

(b) The cost of a moulding round the base of the dome at 60 cents per foot;

(c) The cubical contents of the room.



*Algebra.**Time—Three hours.*

1. (a) What is the algebraical difference between any two quantities? Distinguish it from the arithmetical difference.

(b) From  $2(a^2 + b^2 + c^2)$  subtract the sum of  $a^2 - 4ab - 3b^2$ ,  $ab - 4b^2 - 3a^2$ , and  $b^2 - 4a^2 - 3ab$ .

2. (a) State and prove the Index Law when the index is a positive integer.

(b) Find the product of  $x^2 - ax + a^2$ ,  $x^2 + ax + a^2$ ,  $a + x$ , and  $a - x$ .

3. (a) State in the form of an equation the relation between the terms of a division.

(b) The product of two algebraical expressions is  $x^6 + x^5y + x^4y^2 - x^3y^3 + y^6$  and one of them is  $y^2 + x^2 + xy$ ; what is the other?

(c) Divide the difference between  $(2a + 3b)^2$  and  $(3a + 2b)^2$  by  $a + b$  (Use any short method you can.)

4. (a) Explain the following terms: Integral expression; Rational expression; Factor.

(b) Resolve into factors:

(i)  $16x^4 - 8x^2 + 1$ .

(ii)  $x^4 + x^2 + 1$ .

(iii)  $(3x^2 + x - 2)^2 - (x^2 - x - 2)^2$ .

5. (a) Prove that the L. C. M. of any two expressions is equal to their product divided by their H. C. F.

(b) Find the H. C. F. and L. C. M. of  $x^3 + 4x^2 - 8x + 24$  and  $x^4 - x^3 + 8x - 8$ .

6. Solve:

$$(a) \begin{cases} \frac{1}{2}(x-y) - \frac{1}{3}(x-y) = 8 \\ \frac{1}{3}(x+y) - \frac{1}{4}(x-y) = 11 \end{cases}$$

$$(b) \begin{cases} x + 2y + 3z = 14 \\ 4x - y + 2z = 8 \\ 3x - 2y - z = 4 \end{cases}$$

7. A jeweler had two cups worth \$42 and one cover for both. The first cup and cover are worth three times the second; the second cup and cover are worth twice the first cup. Find the value of the cover.

8. A man travels part of a journey on a bicycle, then takes a train (which travels three times as fast as he did on his bicycle) for the last 60 miles, and arrives at his destination in four hours from the start. Had he taken the train for the whole way he would have saved  $1\frac{1}{2}$  hours. How far did he travel?

9. Find a point in a street 120 feet wide at which a ladder can be placed so that its top will reach a window on one side of the street 60 feet from the ground or on the other side a window 40 feet from the ground.

*Geometry.*

*Note.—Candidates are permitted to use ruler, compass and protractor.*

*Time.—Three hours.*

1. Specify the several conditions under which two triangles will coincide. Show according to Hill the truth of any one case.

2. (a) Classify quadrilateral figures according as they have no sides parallel, one pair of sides parallel, or two pairs of sides parallel.

(b) Construct a parallelogram whose adjacent sides shall be 48 feet and 32 feet and one of whose angles shall be 50 degrees. (Draw to a scale, 1 inch = 16 feet.)

(c) Show according to Hill that the diagonals of a rectangle are equal.

3. (a) Define circle, chord, tangent.

(b) From the definition of a circle infer any three properties of the circle.

(c) Draw according to Hill a tangent to a given circle through a given point.

4. (a) On the same base, and on the same side of it, there can not be two triangles having their sides which are terminated at one extremity of the base equal to one another, and likewise those which are terminated at the other extremity equal to one another. I. 7.

(b) Explain the force of "likewise" in the enunciation.

(c) A rectangular gate is braced diagonally from its lower hinge; prove it can not sag.

5. (a) Equal triangles, on equal bases, in the same straight line, and on the same side of it, are between the same parallels. I. 40.

(b) Explain the necessity of each restrictive clause in the enunciation.

(c) Two equal triangles, on equal bases, in the same straight line, have their vertices joined; prove that this joining line is either parallel to the base or is bisected by the base.

6. (a) If the square described on one of the sides of a triangle be equal to the squares described on the other two sides of it, the angle contained by these two sides is a right angle. I. 48.

(b) Define converse propositions. Enunciate two converse propositions both of which are true; two, of which only one is true; and two, neither of which is true.

7. Solve or prove the following:

(a) If the sides of a parallelogram are not equal the diagonals of it do not intersect at right angles.

(b) Find a line whose square shall be equal to the difference of two given squares.

(c) Show that stones having the form of an equilateral triangle, of a square, or of a hexagon, may be advantageously used in paving a street.

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### *Book-keeping.*

*Time—Two hours.*

1. Write the following:

(a) An advertisement under the heading "Book-keeper Wanted." (Do not use your own name or address.)

(b) An application for the position.

(c) A letter of thanks for the appointment.

2. A owes B a mdse. bill of \$13.75, for which an itemised account has been rendered. On March 3rd A sold B 27 lbs. 10 oz. butter at 30c

per lb.; 8 doz. 9 eggs at 25c per doz.; and 267 lbs. pork at  $6\frac{1}{2}$ c per lb. On the same day A purchased from B  $3\frac{1}{2}$  lbs. tea at 40c per lb.;  $2\frac{1}{2}$  lbs. coffee at 25c per lb.; sugar \$1; a suit of clothes for \$10.50.

(a) Make out the bill and close the account by a cash balance.

(b) Give A's journal entries.

3. Journalise the following entries in John Moment's day book:

(a) Lost by fire mdse. to the value of \$200.

(b) Paid clerk's salary for three months, \$150.

(c) Sold Hoffs & Co. my house worth \$2,500; received in payment their note for \$1,000, cash \$1,000, balance charged to their account.

(d) The Standard Bank discounts Hoffs & Co.'s note in my favour; net proceeds \$980.

4. Smith enters into business for one year, investing \$10,000. During the year he withdrew \$2,000, and paid in wages and other expenses \$1,500. At the close of the year he has cash in hand \$3,000; personal accounts \$1,500; mdse. on hand \$10,000; and notes \$1,750. He owes a personal account \$3,000, and notes \$2,000.

Make out a statement in proper form showing his gains, losses, assets and liabilities.

5. (a) Briefly indicate the means book-keepers take in order to readily trace a transaction from one book to the other.

(b) State how the following accounts are balanced: Mdse., expense, loss and gain, stock.

(c) Describe your method of making out a trial balance.

### *Agriculture and Botany.*

*Note—The presiding examiner shall deliver all the specimens to one-third of the candidates at the beginning of the examination, transfer them to another third at the beginning of the second hour, and to the remaining third at the beginning of the third hour. Candidates are requested not to injure the specimens.*

*Note—Candidates must obtain at least 34 per cent. of each section.*

*Time—Three hours.*

#### A.

1. How will you test whether or not grain is "good seed grain"?

2. What processes of tillage are carried on (a) before and (b) after seeding? Discuss the purpose of each process.

3. Describe the difference in tillage according as the crop is a fibrous-root or a tap-root one. Account for this difference.

4. (a) Show the importance to plants of nitrification in the soil.

(b) What are the favourable conditions under which the process takes place?

(c) Discuss what the farmer may do towards securing these conditions.

5. How does the crow, hawk and blackbird, respectively, affect the farmer's work?

6. Describe how the life of a tree is affected by transplanting, and hence how to transplant trees, and care for them the first season.

## B.

1. That an animal may live it must breathe, take food and assimilate it; the products must be carried to replace old and form new tissues, and waste materials must be eliminated. Which of these functions are performed by plants, and how?

2. Compare exogens and endogens as regards the general structure of their seeds, leaves, stems and flowers.

3. (a) Distinguish between pollination and fertilisation; self fertilisation and cross fertilisation.

(b) Why are self fertilisation and cross fertilisation necessary? Which is the more usual, and how is it commonly accomplished?

4. Compare the pea and rose families as to leaves, flowers, fruit and length of stem.

5. (a) What use is colour to the leaf, to the flower, to the stem, to the fruit?

(b) What use are odors to flowers, veins to leaves, branches to plants, root-hairs to roots?

6. (a) Describe as to insertion and cohesion of parts the flower in specimen marked 3A.

(b) Describe the leaf in this specimen.

(c) Identify and classify this specimen.

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*Physics.*

*Time—Two and one-half hours.*

1. (a) Describe a siphon and explain its action.

(b) How will varying diameters of the same siphon affect the flow of liquid? Upon what does the height to which a liquid can be raised in a siphon depend?

(c) By reference to the principle of the siphon explain the intermittent flow of water from natural springs.

2. (a) Distinguish temperature and quantity of heat.

(b) Which contains the more heat, the Atlantic Ocean or a tea kettle full of boiling water? Which is capable of giving heat to the other?

(c) Ice is to be kept as long as possible in a warm room. Describe with reasons a suitable box in which to keep it.

3. The length of a horizontal lever is 12 feet and the balancing weights at its ends are 3 and 6 feet respectively. If each weight be moved 2 feet from the ends of the lever, find how far the fulcrum must be moved to produce equilibrium.

4. (a) Show that if the centre of gravity be found for one position of a body it will be the centre of gravity when the body is placed in any other position.

(b) Two carriages have equal bases but the centre of gravity of the one is higher than the centre of gravity of the other. Which of the two is the more easily upset? Illustrate by diagram.

5. A smooth vertical cylinder one foot high and one foot in diameter

is filled with water and closed by a piston weighing 4 pounds; find the total pressure on the curved surface.

6. (a) Tell how the freezing and boiling points of a thermometer are determined.

(b) Sketch the process of ebullition and give reasons why a change of external pressure affects the boiling point.

7. (a) Define: Porosity, elasticity, ductility, viscosity, acceleration, kinetic energy.

(b) What are the three states of matter? How are they distinguished? Give reasons for considering flour as a solid and tar as a liquid.

8. Enunciate the three laws of motion and give an application of each.

9. By diagrams illustrate a method of heating a two story house by means of a hot water furnace placed in the basement.

### Drawing.

*Note—Drawing is to be freehand except in questions 1 and 2. Each freehand drawing should be about three inches high.*

*Time—One and one-half hours.*

1. Make a working drawing of a chest of the following dimensions: Length 8 feet, width 4 feet, height 4 feet. The lid projects half an inch and the lumber is 1 inch thick. Scale, half an inch to a foot.

2. Make an outline drawing of the cube, sphere, and cylinder grouped in a pleasing manner.

3. Sketch the doorway of the examination hall, showing door partly open.

4. Draw any one of the following: Latin cross, quatrefoil, dog-tooth ornament, fleur-de-lis. Write a brief historical note on the object drawn.

5. Sketch a hat placed on the teacher's desk.

6. Illustrate:

#### THE OLD TREE.

Here in the fork  
The brown nest is seated;  
Four little blue eggs  
The mother keeps heated.

### THIRD CLASS.

#### Poetical Literature.

*Time—Three hours.*

Dear is the memory of our wedded lives,  
And dear the last embraces of our wives  
And their warm tears: but all hath suffered change:  
For surely now our household hearths are cold:

Our sons inherit us : our looks are strange : 5  
 And we should come like ghosts to trouble joy.  
 Or else the island princes over bold  
 Have eat our substance, and the minstrel sings  
 Before them of the ten years' war in Troy,  
 And our great deeds, as half forgotten things. 10  
 Is there confusion in the little isle ?  
 Let what is broken so remain.  
 The Gods are hard to reconcile :  
 'Tis hard to settle order once again.  
 There is confusion worse than death, 15  
 Trouble on trouble, pain on pain,  
 Long labour unto aged breath,  
 Sore tasks to hearts worn out by many wars  
 And eyes grown dim with gazing on the pilot stars.

1. (a) In a phrase or short sentence tell the subject of the above lines.

(b) Show the effect of the introduction of this stanza upon the poem.

(c) Tell clearly the significance of line (4) and line (13).

(d) Write explanatory notes upon : "inherit us" (line 5), "come like ghosts" (line 6), "minstrel sings before them" (line 8), "pilot-stars" (line 19).

2. The poem "Ulysses" may be regarded as the antithesis of the "Lotos Eaters." Briefly compare the "mood" portrayed in each of the poems.

3. Give a description of Sir Galahad, based upon the poem named after him.

4. What type of character is represented in "St. Agnes' Eve"? Making use of quotation from the poem tell some of the thoughts and aspirations of the speaker.

5. Using the two poems, "You Ask Me Why," and "Of Old Sat Freedom," as a basis, tell what you know of Tennyson's views and expectations regarding social and political matters.

6. Give accurately the meaning of the italicised words as employed in the following passages :

(a) The tempest crackles on the *leads*.

(b) For these three *suns* to store and *hoard myself*.

(c) Nor deal in *watch-words* overmuch.

(d) As this pale taper's earthly spark  
 To yonder *urgent* round.

(e) And from his *blazoned* baldric slung  
 A mighty silver bugle hung.

(f) She mixt her fancies with the *sallow rifted* glooms of evening.

7. Name the poem and briefly indicate the connection in which each of the following occurs :

(a) But gentle words are always gain.

(b) Old age hath yet his honour and his toil.

(c) He is all fault who hath no fault at all.

(d) From skies of glass

Jacob's ladder falls

On greening grass.

(e) The long day wanes; the slow moon climbs; the deep  
Moans round with many voices.

(f) Her open eyes desire the truth.  
The wisdom of a thousand years  
Is in them.

(g) Love, thou art bitter; sweet is death to me.  
O Love, if death be sweeter, let me die.

8. (a) State some of the chief peculiarities of poetry as distinguished from prose.

(b) In the following extracts point out a few of the cases in which the expression is poetical and such as would not be employed in simple prose:

It little profits that an idle king,  
By this still hearth, among these barren crags,  
Match'd with an aged wife, I mete and dole  
Unequal laws unto a savage race,  
That hoard, and sleep, and feed, and know not me,

\* \* \* \* \*

Life piled on life  
Were all too little, and of one to me  
Little remains; but every hour is saved  
From the eternal silence, something more,  
A bringer of new things; and vile it were  
For some three suns to store and hoard myself,  
And this gray spirit yearning in desire  
To follow knowledge like a sinking star,  
Beyond the utmost bound of human thought.

9. Give a character-sketch of Elaine

#### *Prose Literature.*

*Time—Two and one half hours.*

1. What do you suppose was George Eliot's purpose in writing "Silas Marner"?

2. Show the importance of the theft of Marner's gold to himself, to Godfrey Cass, and to Eppie.

3. State the purpose of the chapter in which the party at Red House on New Year's Eve is described.

4. What part is played by Dolly Withrop in working out the purpose of this novel?

5. Why was it necessary to send Marner back to Lantern Yard and to have him fail in his quest?

6. How is the story helped by the drowning of Dunstan Cass in the Stonepit immediately after his theft?

7. Show whether it is essential to the purpose of the novel that Eppie should refuse to go to the home of her real father.

8. Comment on George Eliot's use of Humour in this novel, referring to instances in support of your view.

9. Write a historical note on the production of "Silas Marner."

*Grammar and Rhetoric.**Time—Two hours.*

## A.

Octavius, I have seen more days than you :  
 And though we lay these honours on this man,  
 To ease ourselves of divers slanderous loads,  
 He shall but bear them as the ass bears gold,  
 To groan and sweat under the business, 5  
 Either led or driven, as we point the way ;  
 And having brought our treasure where we will,  
 Then take we down his load and turn him off,  
 Like to the empty ass, to shake his ears  
 And graze in commons, 10

1. Give an analysis of the above extract so far as to show the kinds and relationship of the subordinate clauses.

2. Tell clearly the function and construction of the various infinitives found in the passage.

3. Give the exact grammatical value of: "you" (line 1), "but" (line 4), "driven" (line 6), "where" (line 7), "like" (line 9).

4. Account for the use of "shall" (line 4), and "will" (line 7). Give briefly the main distinctions in the use of these words.

5. (a) State some of the various applications of the subjunctive and give examples.

(b) Contrast the two forms in the following sentences: Though he slays (slay) me yet will I trust in him. If he was (were) guilty he deserves punishment.

## B.

(1) An unimportant, wandering, sorrow stricken man ; not much note was taken of him while he lived, and the most of that has vanished in the long space that now intervenes.

(2) It is five centuries since he ceased writing and living here. (3) After all the commentaries the Book itself is mainly what we know of him.

(4) The Book ;—and we might add that portrait commonly attributed to Giotto, which, looking on it you cannot help inclining to think genuine whoever did it.

(5) To me it is a most touching face ; perhaps of all faces I know, the most so. (6) Blank there, painted as on vacancy, with the simple laurel wound round it : the deathless sorrow and pain, the known victory which is also deathless : significant of the whole history of Dante ! (7) I think it is the mournfullest face that ever was painted from reality ; an altogether tragic heart-affecting face. (8) There is in it, as foundation of it, the softness, tenderness, gentle affection as of a child ; but all this is as if congealed into sharp contradiction, into abnegation, isolation, proud, hopeless pain. (9) A soft ethereal soul looking out so stern, implacable, grim-trenchant, as from imprisonment of thick-ribbed ice !

(10) Withal it is a silent pain, too, a silent scornful one : the lip is curled in a kind of godlike disdain of the thing that is eating out his



heart,—as if it were withal a mean insignificant thing, as if he whom it has power to torture and strangle were greater than it. (11) The face of one wholly in protest, and life-long unsundering battle against the world. (12) Affection all converted into indignation; an implacable indignation; slow, equable, implacable silent, like that of a god!

(13) The eye, too, it looks out in a kind of surprise, a kind of inquiry, Why the world was of such a sort?

(14) This is Dante: so he looks, this "voice of ten silent centuries; and sings us his mystic unfathomable song."

1. Who is the author? Point out any peculiarities of style by which he may be identified.

2. Compare this "pen-portrait" as to (a) first general impression, (b) selection of details, with any other you have read.

3. What is the main impression produced? In how far do the first three paragraphs contribute to this impression?

4. Explain the significance of the following phrases: "painted as on vacancy," (sentence 6), "silent, like that of a God," (sentence 12), "as from imprisonment of thick-ribbed ice," (sentence 9).

5. Show the bearing of the last sentence upon the rest of the passage.

### Essays.

*Time.—One and one-half hours.*

Write briefly—say three or four paragraphs—on three subjects selected from the list that follows. It is not the extent of your knowledge about the selected subjects so much as your ability to say a few things about them in a simple, clear, orderly and correct way that is the test.

1. One of the following:

- (a) Description of Squire Cass.
- (b) Description of Little Eppie that first night in Marner's cottage.
- (c) Description of Silas Marner as he appeared at first to the people of Raveloe.

2. Either of the following:

(a) Give in narrative form the substance of the conversation between Godfrey and Nancy in the oaken parlour after they had walked home from their interview with Silas and Eppie.

(b) Give in narrative form the substance of the conversation between any two of the ladies during the party at the Red House.

3. Either of the following:

(a) Discuss: Favourable Chance is the god of all men who follow their own devices instead of obeying a law they believe in.

(b) Discuss: There is hardly a servant-maid in these days who is not better informed than Miss Nancy; yet she had the essential attributes of a lady—high veracity, delicate honour in her dealings, deference to others, and refined personal habits.

*Arithmetic and Mensuration.**Time — Three hours.*

1. (a) Calculate the value of  $\sqrt{(3+2\sqrt{2})}$  to 2 decimal places.  
 (b) The square of 12345 is 152399025; show how you would find the square of 12344 without going through the ordinary process of multiplication.
2. Define ratio and proportion. State three theorems in proportion. In what ways may a proportion be expressed?  
 Using proportion solve the following: Divide \$53.50 among A, B and C, giving A \$7 as often as B gets \$8 and giving B \$5 as often as C receives \$4.
3. A commission merchant sold a consignment of bacon at  $11\frac{1}{2}$  cents per pound and invested the proceeds, less his commission, in tea at 38 cents per pound. His commission on the two transactions at the rate of 5 per cent. on the sale of bacon and 2 per cent. on the purchase of tea amounted to \$52.50. Find the weight of bacon sold, and of tea purchased.
4. The Royal Fire Insurance Company insured a building for \$60,000 at  $\frac{1}{4}$  per cent. premium. They reinsured one half the risk in another company at  $\frac{3}{8}$  per cent. and one third the risk in a third company at  $\frac{1}{4}$  per cent.  
 (a) What amount and what rate of premium did the Royal Company net on the remainder of their risk?  
 (b) In case of total destruction of the building what would have been the actual loss to the Royal Insurance Company?
5. What is meant by "6 per cent. at 104"? A man invests \$6,534 in 3 per cent. stock at 90 and on the stock rising to 91 transfers his stock to the  $3\frac{1}{2}$  per cent. stock at 93 $\frac{1}{2}$ . What change is there in his annual income?
6. A railway train having left a terminus at noon is overtaken at 18 o'clock by another train which left the same terminus at 13 o'clock. If the former train had been 10 miles further on the road when the latter started it would not have been overtaken till 20 o'clock. Find the rates of the trains.
7. A grocer mixed together two kinds of tea and sold the mixture, 144 pounds, at an advance of 20 per cent. on cost receiving for it \$62.10. Had he sold each kind of tea at the same price per pound as he sold the mixture he would have gained 15 per cent. on the one and 25 per cent. on the other. How many pounds of each were there in the mixture and what was the cost per pound?
8. (a) A hollow prism is 11 meters high, the base is a regular hexagon whose side is 6 meters and whose diameter is 10.392 meters. How many litres of water will it hold if a kilogram of water occupies a cubic decimeter and a litre of water weighs a kilogram?  
 (b) What is the relation of the altitude of an equilateral triangle to its side? Show that it is constant.
9. The slant height of the conical part of a tin funnel is 6 inches, the circumference at the base is 20 inches and at the top is  $1\frac{1}{4}$  inches, the cylindrical part is  $1\frac{1}{4}$  inches in circumference and 8 inches long. Find the area of the funnel.

## Algebra.

*Note.*—Candidates must obtain at least 34 per cent. on each section.

*Time.*—Three hours.

1. Show without expansion that  $(a-b)^3 - c^3 - 3c(a-b)(a-b-c) = a^3 - 3a^2(b+c) + 3a(b+c)^2 - (b+c)^3$ .

2. Resolve into factors :

$$(a) \quad x^4 - 7x^2y^2 + y^4.$$

$$(b) \quad 1 - \left\{ \frac{2a+3b}{3a+2b} \right\}^2$$

3. Define dimensions and multiple. Find the H.C.F. and L.C.M. of  $a^4 - 25a^2 - 60a - 36$ ;  $a^4 + 10a^3 + 25a^2 - 36$ ; and  $a^3 + a^2 - 14a - 24$ .

4. (a) If  $\frac{a}{b} = \frac{c}{d}$ , show synthetically  $\frac{a+b}{a-b} = \frac{c+d}{c-d}$

(b) Prove that if  $a, b, c$  be unequal and

$$\frac{b-c}{x} = \frac{c-a}{y} = \frac{a-b}{z}$$

then  $x+y+z=0$ , and  $ax+by+cz=0$ .

5. Solve :

$$(a) \quad \frac{4x+11}{x+2} + \frac{2x+13}{x+5} = \frac{5x+18}{x+3} + \frac{x+7}{x+4}$$

$$(b) \quad \begin{cases} x+y=3 \\ x-y=1 \\ x+y+z=4 \end{cases}$$

6. A stationer sold envelopes at a certain price per thousand,  $27\frac{3}{11}$  per cent. of the selling price being profit. He gained \$3 by selling 4000. Find the cost price.

B.

7. (a) Define a surd. Prove that if  $a + \sqrt{b} = m + \sqrt{n}$  where  $a$  and  $m$  are rational and  $\sqrt{b}$  and  $\sqrt{n}$  are irrational; then will  $a=m$  and  $b=n$ . Apply this proposition in the case of the equation  $15 + \sqrt{(676)} = 25 + \sqrt{(256)}$ . Point out the fallacy.

(b) Find the square root of  $41 + 12\sqrt{8}$  true to the second decimal place.

8. Solve  $ax^2 + bx + c = 0$ . From your result

(a) Show that a quadratic has two roots.

(b) Show when the roots are real and equal.

(c) Show when the roots are imaginary.

9. Solve :

$$(a) \quad 2x+3=6x^2+x.$$

$$(b) \quad xy(x-y)=6.$$

$$x^3 - y^3 = 19.$$

10. The perimeter of a right angled triangle is 30 inches; its area is 30 square inches. Find its sides.

11. When the price of sugar rises 50 per cent. and the price of tea 10 per cent. the increase in the price of 1 lb. of tea and 4 lbs. of sugar, which together originally cost 60c. is 25c. Find the original price of each.

12. Goods are sold for \$357, thus making a gain per cent. equal to one-ninth of the number of dollars in the cost price. Find the cost price.

*Geometry.*

*Note.*—Candidates must obtain at least 34 per cent. on each section.

*Time.*—Three hours.

## A

1. (a) If from the ends of the side of a triangle there be drawn two straight lines to a point within the triangle, these lines shall be less than the other two sides of the triangle, but shall contain a greater angle. I. 21.

(b) Examine the proposition as the point moves from the base, through the vertex, to a position beyond the vertex.

(c) How much greater is the angle contained by the lines than the angle contained by the sides?

(d) If the angle be equilateral and the point be the middle point of the perpendicular from the vertex on the base the sum of the lines is

$$\frac{\sqrt{3}}{4}(\text{sum of sides}).$$

2. (a) If a straight line be divided into two equal parts and also into two unequal parts, the rectangle contained by the unequal parts together with the square on the line between the points of section is equal to the square on half the line. II. 5.

(b) Show that proposition (a) corresponds to either of the formulæ

$$(a+b)(a-b) = a^2 - b^2 \text{ or } \left\{ \frac{a+b}{2} \right\}^2 - \left\{ \frac{a-b}{2} \right\}^2 = ab.$$

3. (a) If a straight line be divided into two equal, and also into two unequal parts, the squares on the two unequal parts are together double of the square on half the line and of the square of the line between the points of section. II. 9.

(b) Show that proposition (a) corresponds to the formula

$$(a+b)^2 + (a-b)^2 = 2a^2 + 2b^2.$$

(c) If AB be divided equally in C and unequally in D show that the sum of the squares on AD and DB is equal to twice the rectangle contained by AD and DB together with four times the square on CD.

## B.

4. (a) Define a circle.

(b) From the definition of a circle infer three properties of the circle.

(c) Prove that a circle can have only one centre.

5. (a) If a straight line drawn through the centre of a circle bisect a straight line in it which does not pass through the centre, it shall cut it at right angles; and if it cut it at right angles, it shall bisect it. III. 3

(b) Define tangent, sector, angle in a segment, angle of a sector.

(c) Having the arc of a circumference complete the circumference.

(d) If two circles ABCD, ABEF, cut each other in points A, B, any two parallel straight lines DAF, CBE, drawn through the points of section to cut the circle are equal.

6. (a) The angles in the same segment of a circle are equal to one another. III. 21.

(b) Enunciate and prove the converse of proposition (a).

(c) Two circles intersect in A and B; through A two chords CAD and EAF are drawn cutting the circles in C, D, and E, F; prove the triangles BCD and BEF equiangular.

7. (a). If from any point without a circle two straight lines be drawn, one of which cuts the circle and the other touches it; the rectangle contained by the whole line which cuts the circle, and the part of it without the circle, shall be equal to the square on the line which touches it. III. 36.

(b). Find the locus of the point from which if secants be drawn to each of two intersecting circles the rectangle contained by the whole secant and the part without the circle may have a constant value.

### *Geography.*

*Time—Two hours.*

1. What is meant by "climate"? By what is it modified? What changes would so modify the climate of the Chilian desert as to make it a fertile region?

2. What are the main factors determining the distribution of life in salt water, in fresh water, on land? Show how types of life in water, air and land adapt themselves to climatic surroundings. Describe the barriers to the spread of life.

3. What is the importance of sea ports? What determines the site of a strong sea port? Name four of the world's greatest sea ports and state the importance of each.

4. Describe Jamaica under the following heads: Surface, drainage and industries. State the importance of this island to Great Britain.

5. Write notes on any two of the following: Mineral fields of Nova Scotia, timber supply of the Laurentian Plateau, fruit growing in Ontario, fishing industry in British Columbia.

6. Compare the Volga and Saskatchewan River Basins as to area, fertility and products. Which is commercially the more important? Why?

7. Draw an outline map of the southern coast line of Eurasia. Indicate with reasons the regions best suited for ancient and for modern civilisation.

8. What geographical conditions have retarded settlement in the North-West Territories; have made Assiniboia an important wheat raising centre; and Northern Alberta a dairying centre?

### *British and Canadian History.*

*Time—Two hours.*

1. Draw a map of North America locating the territory occupied by the different tribes of Indians and indicating the forts built by the French and English for the protection of their respective colonies.

2. Describe the method of government in New France subsequent to 1665.

3. What influence had the coming of the United Empire Loyalists upon the industrial and political development of Canada?

4. State fully the reasons that induced the leading statesmen of Canada to look with favour upon the idea of a confederation of the provinces.

5. What were the causes that led (a) to the formation of the New Monarchy, (b) to its downfall.

6. Criticise the administration of the younger Pitt under the following heads.

(a) His relation to the King.

(b) His domestic policy.

(c) His foreign policy.

7. Discuss the development of England in the nineteenth century, along industrial, educational and political lines.

8. Write brief notes upon (a) the Boxer movement in China, (b) the South African war.

### *General History.*

*Time—Two hours.*

1. Compare the government, religion and learning of the ancient Egyptians with those of the Persians.

2. State clearly the influence of the Hebrews and Phœnicians upon the age in which they lived.

3. Which was the higher type of manhood—the Spartan or Athenian? Give reasons for your answer.

4. What was the effect of the Peloponnesian War (a) upon Athens, (b) upon Greece, as a whole?

5. Outline briefly the struggle between the Patricians and Plebians for political equality.

6. Write a short note upon Roman Provincial Government.

7. Enumerate the causes that led to the downfall of Rome.

8. Compare Athens at the time of Pericles with Rome at the time of Augustus.

### *Agriculture and Botany.*

*Note.—The presiding examiner shall deliver all the specimens to one-third of the candidates at the beginning of the examination, transfer them to another third at the beginning of the second hour, and to the remaining third at the beginning of the third hour. Candidates are requested not to injure the specimens.*

*Note.—Candidates must obtain at least 34 per cent. on each section.*

*Time.—Three hours.*

#### **A.**

1. "There is no doubt that one of the most important things to help the North-West farmer is the planting of trees."—*Sir Henri Joly de Lotbinière.*

Show the benefits to the North-West of tree culture.

2. Why should weeds be eradicated? Select any three noxious weeds and show how a knowledge of the habits of each is necessary in eradicating them.

3. Show the different advantages of "mixed farming" in the Territories.

4. (a) Show how the origin of soil affects its depth, composition and texture.

(b) Why are the foothills of the mountains in the Territories grazing rather than grain raising districts?

5. (a) What is meant by a "Feeding Standard"; by a "Nutritive Ratio"?

(b) In general terms tell why oats are so valuable in feeding a working horse; or barley in feeding a "bacon" hog.

#### B.

6. A plant belonging to one of the five orders you have studied is given you. In which would you place it if it were (a) a climber, (b) a tree, (c) without a corolla; (d) if its fruit were a berry, (e) its flowers in racemes, (f) its fruit a legume, (g) its stamens in two groups of two and four, (h) its stamens on the calyx, (i) its ovary three-celled, (j) its ten stamens in two groups of one and nine.

7. (a) Define growth, state its conditions and tell how it is effected.

(b) Compare the manner of growth of the root with that of the stem. Show how each is suitable for its environment

8. (a) Draw a cross-section of a leaf. State the use of each part exhibited in your drawing.

(b) State any difference between leaves surrounded by air and leaves which float upon water.

(c) Give any laws according to which leaves are arranged upon the stem.

9. (a) What is a fruit in botany?

(b) By what means do fruits discharge their seeds?

(c) Explain the structure of an apple, a potato, a grape, a strawberry, and an onion.

10. (a) Determine the inflorescence of specimens "2 A" and "2 B."

(b) Describe the foliage of either specimen.

(c) Describe the insertion and adhesion of specimen "2 B."

(d) Identify and classify each of the specimens.

#### *Physics.*

*Time—Two and a half hours.*

1. A water bottle is covered with felt. Show why the contained liquid may be cooled by moistening the felt and placing the bottle in a dry room.

2. What are the advantages in using each of the following as a machine: The inclined plane, scissors, corkscrew, key, wheelbarrow? Upon what does the ratio of gain depend in each case?

3. Explain the principal methods of magnetising. What is an electro magnet? Compare the magnetic properties of soft iron, steel, wood, straw, and glass.

4. A body (mass 150 pounds) with a specific weight of 0.9 is immersed in sea water whose specific gravity is 1.027. Find the upward pressure on a square foot of the lower surface of the body.

5. (a) "Two sounds can differ from each other in only three particulars." Define these particulars and state upon what each depends. How is pitch measured?

(b) Explain the production of "beats."

6. (a) How would you illustrate experimentally the interference of sound waves?

(b) Draw a diagram to explain the phenomena of echoes. Show how this principle can be applied in the construction of whispering galleries.

(c) Show that the construction of the vocal organs is well adapted for the production of sounds.

7. (a) What is meant by refraction and dispersion of light? On what facts do these depend? Are rays of all colours equally refrangible and dispersible? Why?

(b) In spearing fish in deep clear water where should you aim? Why?

8. Explain, using illustrations, the action of (a) the receiver of a telephone, or (b) the incandescent electric lamp.

### Drawing.

*Note.*—Freehand drawing is required in all questions except the first. Each drawing should be about three inches in height.

*Time.*—One and one-half hours.

1.—Make a working drawing of a common kitchen table, 4 feet long, 3 feet wide and  $2\frac{1}{2}$  feet high. The legs are placed 6 inches from the corners and the rails joining them are 6 inches wide. The lumber is one inch thick. Scale one half an inch to a foot.

2. Make a shaded drawing of the hemisphere placed on the cube, and resting on its curved face.

3. Arrange a chalk box, book and ink bottle in a pleasing manner and sketch.

4. Draw in outline a chair placed on the floor at least six feet from the front row of desks.

5. Draw an apple with the stem upward and a half apple lying beside it.

6. Illustrate one of the following:

(a) Some peculiarity in dress worn during the reign of Queen Elizabeth.

(b) It is almost sunset. The round red sun hangs low over the sand; it will be gone in a few minutes more. The tent door is turned away from the sun and Abdel Hasson sees only the rosy glow of its light on the hills in the distance.



- (c) Oh, the little blue flax-flower !  
 It groweth on a hill,  
 And be the breeze awake or 'sleep  
 It never standeth still.

## FIRST CLASS.

*Literature—First paper.*

*Time—Two and a half hours.*

It must be by his death ; and, for my part,  
 I know no personal cause to spurn at him,  
 But for the general. He would be crown'd ;—  
 How that might change his nature, there's the question.  
 It is the bright day that brings forth the adder,  
 And that craves wary walking. Crown him ?—that ;—  
 And then, I grant, we put a sting in him,  
 That at his will he may do danger with.  
 The abuse of greatness is, when it disjoins  
 Remorse from power ; and, to speak truth of Cæsar, 10  
 I have not known when his affections sway'd  
 More than his reason. But 'tis a common proof,  
 That lowliness is young ambition's ladder,  
 Whereto the climber-upward turns his face ;  
 But when he once attains the upmost round 15  
 He then unto the ladder turns his back,  
 Looks in the clouds, scorning the base degrees  
 By which he did ascend. So Cæsar may,  
 Then, lest he may, prevent. And since the quarrel  
 Will bear no colour for the thing he is, 20  
 Fashion it thus : That what he is, augmented,  
 Would run to these and these extremities ;  
 And therefore think him as a serpent's egg,  
 Which, hatch'd, would, as his kind, grow mischievous,  
 And kill him in his skill.

1. (a) By whom is this passage spoken, and under what circumstances ?

(b) Summarise the steps of the argument.

(c) Express in your own language the thought of the speaker in line 5, in lines 7 and 8, in lines 11 and 12 (I have not known . . . reason), and in lines 13 18 ("lowliness . . . ascend").

(d) Explain the following as used in the passage : "for the general" (l. 3), "remorse" (l. 10), "common proof" (l. 12), "the base degrees" (l. 17), "colour" (l. 20).

2. Describe the scene in "Julius Cæsar" where Antony, Octavius, and Lepidus are seated in Antony's house. How does it contribute to the great lesson of the play ?

3. Delineate concisely the character of Brutus and Cassius, bringing out their relation to each other before and after the assassination of Cæsar.

4. To which period of Shakespeare's literary activity do we owe "Julius Cæsar" and "The Tempest"? Name other plays belonging to the same period.
5. Give a short character-sketch of Miranda basing your estimate upon particular incidents in the play.
6. In what respects may Caliban be said to be superior to Stephano and Trinculo?
7. Explain clearly the meaning of the following :
  - (a) I will be correspondent to command  
And do my spiriting gently.
  - (b) I will pay thy graces home both in word and deed.
  - (c) Cæsar, I never stood on ceremonies.
  - (d) And let not man abide this deed but we.
8. Write a brief description of the poem "Lycidas."
9. Quote any one of Milton's sonnets noting any peculiarities in thought and execution.
10. What can we learn about the man, Milton, from a study of the twin poems, "L'Allegro" and "Il Penseroso"?
11. What do you understand by the "Three Unities" in dramatic poetry? State some of the "further rules" laid down for the drama.

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*Literature (Second Paper.)*

A.

*Time.—Three hours.*

1. Interpret accurately the meaning of the following passage, and carefully indicate the connection in thought :

Even now we hear with inward strife  
A nation toiling in the gloom—  
The Spirit of the years to come  
Yearning to mix himself with Life.

A slow develop'd strength awaits  
Completion in a painful school ;  
Phantoms of other forms of rule,  
New Majesties of mighty states—

The warders of the growing hour,  
But vague in vapour, hard to mark ;  
And round them sea and air are dark  
With great contrivances of Power.

Of many changes, aptly joined,  
Is bodied forth the second whole.  
Regard gradation, lest the soul  
Of Discord race the rising wind ;

A wind to puff your idol fires,  
And heap their ashes on the head ;  
To shame the boast so often made  
That we are wiser than our sires,

2. State some of the more important metrical characteristics of Tennyson's poetry.

- (b) "The splendor falls on castle walls,  
And snowy summits old in story ;  
The long light shakes across the lakes,  
And the wild cataract leaps in glory,  
Blow, bugle, blow, set the wild echoes flying.  
Blow, bugle ; answer echoes, dying, dying, dying."

Show in detail the various elements that aid in giving musical charm to this stanza.

3. Describe the poem, Elaine, so as to give a clear idea of it to a person unacquainted with any of Tennyson's works. (Only a short account of the story is expected. The candidate should show, however, that he has a knowledge of the merits and defects of the poem, of its style and versification. He might also state his own impression regarding it.)

4. What are the distinguishing features of lyric poetry? Make a classification of this branch of poetry, and mention poems belonging to each class.

5. Give an estimate of Tennyson as a lyric poet, and refer particularly to some of his lyrics with which you are familiar.

#### B.

6. What was, probably, George Eliot's object in beginning this novel with a sketch of Silas Marner's life at Lantern Yard?

7. Distinguish briefly the main plot and under plot. Show the relation of the latter to the former when Eppie first came to Silas; when she refused to leave Silas and go with her real father.

8. Comment upon the influence of women upon the life of Silas Marner.

9. Write a note on the author's use of Nemesis in this novel—especially in the case of Godfrey Cass.

10. What appears to be the author's favourite method in portraying character?

### *Grammar and Rhetoric.*

*Time—Two hours.*

#### A.

I have, when you have heard what I can say ;  
And know it now. The senate have concluded  
To give this day a crown to mighty Cæsar.  
If you shall send them word you will not come,  
Their minds may change. Besides it were a mock  
Apt to be rendered, for some one to say,  
'Break up the senate till another time,  
When Cæsar's wife shall meet with better dreams.'

1. Analyse, so as to show the various subordinate clauses, their kind, and their relation.

2. State the grammatical value and relation of: "when" (line 1), "what" (line 1), "day" (line 3), "them" (line 4), "come" (line 4), "apt" (line 6), "some one" (line 6), "to say" (line 6).

3. Comment upon the use of "shall" and "will" as they are used in the above extract.

4. Write brief etymological notes upon: "manly," "bridal," "furlong," "methinks," "company," "spice," "woman," "holiday."

5. Explain clearly the "dependent and independent uses of model auxiliaries."

6. Give the various sub-clauses of "adjective equivalents."

7. State concisely the various agencies that co-operated to bring about the general adoption of the English language.

8. Tell some of the most important grammatical changes that took place during the Middle English period.

#### B.

(1) His voice and laugh, which perpetually re-echoed through the Custom House, had nothing of the tremulous quaver and cackle of an old man's utterance; they came strutting out of his lungs, like the crow of a cock, or the blast of a clarion. (2) Looking at him merely as an animal,—and there was very little else to look at,—he was a most satisfactory object, from the thorough healthfulness and wholesomeness of his system, and his capacity at that extreme age, to enjoy all, or nearly all, the delights which he had ever aimed at, or conceived of. (3) The careless security of his life in the Custom House, on a regular income, and with but slight and infrequent apprehensions of removal, had no doubt contributed to make time pass lightly over him. (4) The original and more potent causes, however, lay in the rare perfection of his animal nature, the moderate proportion of intellect, and the very trifling admixture of moral and spiritual ingredients; these latter qualities, indeed, being in barely enough measure to keep the old gentleman from walking on all fours. (5) He possessed no power of thought, no depth of feeling, no troublesome sensibilities; nothing, in short, but a few commonplace instincts, which, aided by the cheerful temper that grew inevitably out of his physical well-being, did duty very respectably, and to general acceptance, in lieu of a heart. (6) He had been the husband of three wives, all long since dead; the father of twenty children, most of whom, at every age of childhood, or maturity, had likewise returned to dust. (7) Here, one would suppose, might have been sorrow enough to imbue the sunniest disposition, through and through, with a sable tinge. (8) Not so with our old Inspector! (9) One brief sigh sufficed to carry off the entire burden of these dismal reminiscences. (10) The next moment, he was as ready for sport as any unbreeched infant; far readier than the Collector's junior clerk, who, at nineteen years was much the older and graver man of the two.

1. In a short sentence tell the general impression the author wishes to convey.

2. Examine the paragraph as to (a) unity, (b) sentence-structure, (c) diction.

3. What qualities of style do you judge this paragraph to possess? Indicate the ground on which you base your judgment.

4. In sentences (4) and (5) show the office of such words and phrases as : "indeed," "however," "in short."

5. What is meant by the term "trope"? Distinguish from "figure." Give an example of a "trope" in this paragraph and show its applicability.

### Essays.

*Time.—One and one-half hours.*

Write briefly—say three or four paragraphs—on three subjects selected from the list that follows. It is not the extent of your knowledge about the selected subjects so much as your ability to say a few things about them in a simple, clear, orderly and correct way that is the test.

1. One of the following :

(a) Description of the village of Raveloe.

(b) Description of the betrayal of Silas Marner by William Dane.

(c) Description of Silas Marner at night with his gold.

2. Either of the following :

(a) Give in narrative form the substance of the conversation between Godfrey and Nancy in the oaken parlour after their return home from their interview with Silas and Eppie.

(b) Give in narrative form the substance of the conversation between any two of the ladies during the party at the Red House.

3. Either of the following :

(a) Discuss : Our consciousness rarely registers the beginning of a growth within us : there have been many circulations of the sap before we detect the smallest sign of the bud.

(b) Discuss : Every man's work, pursued steadily, tends in this way to become an end in itself, and so to bridge over the loveless chasms of his life.

### Algebra.

*Note.—Candidates must obtain at least 34 per cent. on each section.*

*Time.—Three hours.*

#### A.

1. Examine if  $x^n + a^n$  is divisible by  $x + a$ .

Write the quotient of  $(2a + 4b - 4c)^3 + (a - b + 7c)^3$  by  $a + b + c$ .

2. (a) Assign a meaning consistent with the index law, to  $a^n$  when  $n$  is negative.

(b) Multiply  $a^{-2} - 2 + a^2$  by  $a^{-1} - 2 + a$ , and divide the product by  $a^{-2} - a^2 - 2a$  ( $a^{-2} - 1$ ).

3. (a) Solve the equation  $ax^2 + bx + c = 0$ . From your solution show that if one root is a surd the other is also.

(b) For what value of  $a$  are the roots of the equation  $4x^2 + (1 + a)x + 1 = 0$  equal to one another? Test your answer in the given equation.

4. If one root of  $x^3 + x^2 - 19x + 5$  be  $2 + \sqrt{3}$ , find the others.

Solve (a)  $x^{\frac{3}{2}} - 26x^{\frac{1}{2}} - 27 = 0$ .

(b)  $\begin{cases} xy + xy^2 = 12 \\ x + xy^3 = 18 \end{cases}$

5. A farmer bought as many sheep as cost him \$400. He reserved 10 and sold the remainder for \$405 at a gain of 50 cents each. How many did he buy? Explain the negative result.

6. Define Ratio. What sets of numbers are excluded by the definition? Prove that any ratio or fraction is made more nearly equal to unity by adding the same quantity to each of its terms.

#### B.

7. Distinguish between an A. P.; G. P.; and a H. P. Show that the arithmetic mean, the geometric mean and the harmonic mean of any two numbers are in geometrical progression.

$$\begin{aligned} \text{If } S_1 &= a + ar + ar^2 + \dots + ar^{2n}, \\ \text{and } S_2 &= a - ar + ar^2 - ar^3 + \dots + ar^{2n}, \\ \text{then } S_1 S_2 &= a^2 + a^2 r^2 + a^2 r^4 + \dots + a^2 r^{2n}. \end{aligned}$$

8. How many balls in a pyramidal pile on a square base, 10 balls to a side?

9. Distinguish between permutations and combinations. Show how to find the permutations of  $n$  things taken  $r$  at a time.

In how many ways can 10 persons be seated at a round table?

10. The number of combinations of  $n$  different letters, taken 5 together in which  $a, b, c$ , occur is 21.

Find the number of combinations of them taken together, in which  $a, b, c$ , and  $d$  occur.

11. (a) State what is meant by the binomial theorem. Prove it true when  $n$  is a positive integer.

(b) Show that the sum of the coefficients of the odd terms of a binomial expansion is equal to the sum of the coefficients of the even terms.

12. Show how the greatest term in the expansion of  $(1+x)^n$  may be found.

Find the greatest term in the expansion of  $(1+x)^{12}$ , when  $x = \frac{1}{2}$ .

#### Geometry.

*Candidates must obtain at least 34 per cent. on each section.*

*Time.—Three hours.*

#### A.

1. (a) In an obtuse angled triangle, if a perpendicular be drawn from either of the obtuse angles to the opposite side produced, the square on the side subtending the obtuse angle is greater than the squares on the sides containing the obtuse angle, by twice the rectangle contained by the side on which, when produced, the perpendicular falls, and the straight line intercepted without the triangle, between the perpendicular and the obtuse angle. II. 12.

(b) Examine this proposition as the contained angle changes from obtuse to acute.

(c) Show that the sum of the square on the lines joining any point in the circumference of a circle to the extremities of the diameter is constant.

2. (a) The diameter is the greatest chord in a circle; and of all others that which is nearer to the centre is always greater than the one more remote; and the greater is nearer to the centre than the less. III. 15.

(b) Draw the chord of a circle, having given its dimension and direction.

3. (a) If two chords of a circle cut one another within the circle, the rectangle contained by the segments of the one is equal to the rectangle contained by the segments of the other. III. 35.

(b) Explain the force of "two" and of "within" in the enunciation.

(c) Show that the rectangle mentioned in (a) is equal to the difference between the square on the radius and the square on the line joining the point of intersection and the centre of the circle.

#### B.

4. Inscribe a circle in a given triangle. IV. 4.

(b) Show that the radius of the inscribed circle is equal to the area of the triangle divided by one half its perimeter.

(c) If the triangle be equilateral show that the area of the inscribed circle is to the area of the circumscribed circle as 1 : 4.

5. (a) Inscribe a regular hexagon in a given circle. IV. 15.

(b) ABCDEF is a regular hexagon; if AC, BD, CE, DF, EA, FB be joined, another regular hexagon will be formed whose area is one third of the area of the former.

6. State the difference between Books I, II, III, IV and Book V, as to subject matter.

7. Explain the terms multiple, submultiple, ratio, duplicate ratio, as applied to magnitudes.

8. (a) Prove that triangles and parallelograms of the same altitude are to each other as their bases. VI. 1.

(b) If the triangles and parallelograms have equal bases they are to each other as their altitudes.

#### Trigonometry.

*Time—Three hours.*

1. State and prove the laws of indices from which the laws of logarithms are derived.

2. Solve by logarithms :

$$\frac{(\cdot 25)^{-5} \times \sqrt[3]{\cdot 072}}{(527 \cdot 58)^{10}}$$

given  $\log 2 = 30103$ ,  $\log 3 = 47712$ ,  $\log 977 = 98989$ ,  $\log 24918 = 39651$ .

3. Define sine and cosine of an acute angle. Show these ratios are constant if the angle is constant but vary if the angle varies.

4. Find the tan of  $30^\circ$ , and of every multiple of  $30^\circ$  up to  $360^\circ$ .

5. A ladder 40 feet long is placed against a house, reaching a

window 20 feet from the ground. Prepare for tabular insertion the cosine of the angle between the ladder and the ground, having given  $\log 3 = 47712$  and  $\log 5 = 69897$ .

6. In any triangle show that the product of any two sides into the sine of the angle between them is constant.

7. Two ships leave the same dock at 8 a.m. in directions S. W. by S., and S. E. by E. at rates 10 miles and 12 miles an hour respectively. Estimate their distance apart and the bearing of one from the other at noon. Scale 16 miles equals 1 inch.

8. Deduce geometrically  $\sin$  of the sum of two angles. Assuming the  $\cos$  of this sum deduce algebraically the tangent of this sum.

If  $\tan A = \frac{b}{a}$ , prove that

$$\frac{2 \cos A}{\sqrt{(\cos 2A)}} = \sqrt{\frac{a+b}{a-b}} + \sqrt{\frac{a-b}{a+b}}$$

9. In the solution of triangles in general specify the four cases which may occur and explain fully the "Ambiguous Case."

If  $a, b$ , and  $B$  had been given to solve a triangle, where  $b$  is less than  $a$ , and if  $C_1, C_2$  be the two values found for determining the third side, prove that  $b^2 + C_1 \cdot C_2 = A^2$ .

10. In any triangle where  $S$  = area,  $s$  = semi-perimeter,  $R$  = radius of circumscribed circle,  $r$  = radius of inscribed circle, and  $r_a$  = radius of escribed circle touching side  $a$ , prove the following relations :

$$R = \frac{a}{2 \sin A}; r = \frac{S}{s}; r_a = \frac{S}{s-a}.$$

11. An equilateral triangle and a regular hexagon have the same perimeter. Show that the areas of their inscribed circles are as 4 : 9.

### *Constitutional History.*

*Time.—Two hours.*

1. What are the "dignified parts" of the English Constitution? Why does Bagehot consider them of great importance?

2. Show clearly how monarchy strengthens government.

3. Discuss the truth or falsity of the motive that the House of Lords is a bulwark against revolution.

4. What are the advantages and disadvantages of a change of ministry?

5. "For many years previous to 1865 the administration of government in Canada had become surrounded with political difficulties of a very perplexing character." Point out these difficulties.

6. Enumerate the principal matters over which the Dominion and Provincial Parliaments respectively have jurisdiction.

7. Mention the rules that govern readjustment of representation.

8. How is the King's Privy Council chosen? What are its functions?

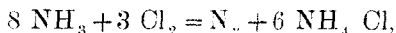


*General History.**Time—Two hours.*

1. Write brief notes upon the government, industries and religion of the Semitic nations.
2. Sketch briefly the development of the Athenian constitution.
3. "On the Romans themselves the effect of their foreign conquests was both good and bad." Explain.
4. Comment upon the origin and influence of chivalry.
5. Discuss the effect upon Europe of the fall of the Eastern Roman Empire.
6. State the causes that led to the French Revolution. How did it affect the condition of the common people in Europe generally?
7. Give a brief sketch of the career of Napoleon Bonaparte.

*Chemistry.**Time—Two hours.*

1. What are the physical and chemical properties of  $\text{HCl}$ ? Describe the process of its preparation and give the equations representing the reactions that take place.
2. State the characteristics of oxidising and reducing agents. Write equations showing instances of oxidation by oxygen, chlorine water and charcoal.
3. (a) State and explain Avogadro's Law.  
(b) Define quantivalence. Write the graphic formulas for sulphuric and phosphoric acids.
4. What is the composition of the following: Soap, glass, coal, tar and gunpowder?
5. (a) Distinguish nitrate and nitrite; nitrous and nitric; sulphate sulphite and sulphide.  
(b) Define acid, base, basic salt, normal salt, alkali.
6. Show clearly how solubility varies with temperature in the following cases: (a) gases in liquids, (b) liquids in liquids, (c) solids in liquids.
7. From the following equation:



what weight of ammonium chloride may be prepared from one gramme of ammonia?

8. Hydrochloric acid solution and manganese dioxide are used to prepare chlorine gas of which we require 100 litres measured at  $88^\circ \text{C}$  and 700<sup>mm</sup> barometer.  
(a) Explain reactions by equations.  
(b) Find the weight of reagents needed.  
(c) Describe suitable apparatus for preparation and collection of the gas.

9. Write the chemical equations expressing the following reactions :
- (a) A small piece of sodium is thrown upon water.
  - (b) Chlorine gas is mixed with hydrogen sulphide.
  - (c) Copper wire and strong sulphuric acid are heated together in a flask and the gaseous product is passed into a solution of iodine.
10. How is commercial arsenic prepared ? State the properties and uses of arsenic. Describe a test for the detection of arsenic.

### Physics.

*Time.—Two and one-half hours.*

- Three pulleys are attached to the same block which supports a weight, and the same string passes round all the pulleys. Draw a diagram illustrating this system and state its mechanical advantage.
- A room is inclosed by blue glass. Describe the appearance to an observer, in such a room, of a lady in a red dress and carrying a book with a yellow cover. Give reasons for change in colour.
- Define specific gravity and density.  
A diamond ring weighs 69.5 grains, and when weighed in water weighs 64.5 grains. The specific gravity of the diamond being 3.5 and of the gold of which the ring is composed 16.5, find the weight of the diamond.
- (a) Explain the formation of the image of an object by means of a concave spherical mirror. Compare a convex spherical lens with a concave spherical mirror of the same focal length, as regards its action on a beam of light.
  - (b) Account for different effects produced by a convex lens when it is used as (i) the object glass of a telescope, (ii) a magnifying glass.
  - (c) Compare the images found on a compound microscope, a camera obscura and the human eye. Account for each type.
- (a) Upon what does resistance of conductors depend ?
  - (b) A piece of copper wire 200 yards long weighs 2 lbs. and a second piece of copper wire 500 yards long weighs  $\frac{1}{2}$  lb. Compare the electrical resistances of the two wires.
- (a) What effect does exhausting half of the air in a closed vessel produce in the velocity of sound passing through it ?
  - (b) How does the velocity of sound through different gases at the same temperature and pressure depend on the density of the gas ? Describe an experiment to prove that the velocity of sound through coal gas is not the same as through air.
- (a) In electrification by friction demonstrate the equal production of positive and negative electricity.
  - (b) Describe the construction and explain the operation of the Holtz machine.
- (a) A compass needle is suspended inside a hollow ball of iron and a magnet is brought near enough to the ball to affect the needle. Explain the effect of the magnet on the needle.
  - (b) If a compass were carried round the equator of the earth what changes would be observed in the direction it pointed during the journey ? Explain.

9. Explain the various heat phenomena where bodies change from one state of matter to another.

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### *Biology.*

*Time—Two and one-half hours.*

1. "Whatever may have been the case at an earlier period in the earth's history, we are justified in regarding the present line between living and lifeless as one of the most clearly defined and important of natural boundaries."

(a) Describe fully the main characteristics that distinguish living matter from lifeless.

(b) What is the purpose of the first clause of the quotation?

2. Define, give examples of, and write notes on the purpose of: Cells, the lifeless matter of the living body, agamogenesis, regeneration.

3. Describe protoplasm under the headings: Appearance; where found; its use; movements; relation to heat, moisture, electricity and chemicals.

4. Give a general outline of the genesis from the germ cell of the body of any animal.

5. Under the following heads describe the earthworm: Senses, locomotion, respiration, alimentary system.

6. The living organism must adapt itself to its environment while at the same time it affects it.

Compare the earthworm and the brake in this respect.

7. "Alongside constructive processes continual destruction goes on." Explain briefly, and illustrate from plant and animal life.

8. Give the general resemblances and differences between unicellular and multi-cellular animals.

9. (a) Describe how differentiation is carried on farther in the infusoria than in amoeba.

(b) Compare bacteria with infusoria. Give reasons for classifying them as plants.

10. (a) Draw and describe the essential parts of specimen slide A. Name it.

(b) Describe the cells in slide B, stating their uses to the organism of which they formed a part.

(c) Describe the tissue systems observed in slide C.

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### *Drawing.*

*Note—Freehand drawing is required in all questions except the first. Each drawing should be about three inches in height.*

*Time—One and one-half hours.*

1. Make a working drawing of a common kitchen table, 4 feet long, 3 feet wide and 2½ feet high. The legs are placed 6 inches from the corners and the rails joining them are 6 inches wide. The lumber is one inch thick. Scale one half an inch to a foot.

2. Make a shaded drawing of the hemisphere placed on the cube, and resting on its curved face.
3. Arrange a chalk box, book and ink bottle in a pleasing manner and sketch.
4. Draw in outline a chair placed on the floor at least six feet from the front row of desks.
5. Draw an apple with the stem upward and a half apple lying beside it.
6. Illustrate *one* of the following :
  - (a) Some peculiarity in dress worn during the reign of Queen Elizabeth.
  - (b) It is almost sunset. The round red sun hangs low over the sand; it will be gone in a few minutes more. The tent door is turned away from the sun and Abdel Hassen sees only the rosy glow of its light on the hills in the distance.
  - (c) Oh, the little blue flax flower !  
       It groweth on a hill,  
   And be the breeze awake or 'sleep  
       It never standeth still.

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### TEACHERS' EXAMINATION, 1901.

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#### PROFESSIONAL.

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#### THIRD CLASS.

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#### *Pedagogy.*

1. Distinguish original and acquired sense-perceptions. Compare them as to value, taking illustrations from geography, nature study and history.
2. Describe the elements in an act of memory. Select some stanza of poetry, some definition in grammar, or some formula in algebra and show how to memorise it.
3. Distinguish induction and deduction. Show how you will teach adjective phrase (a) inductively; (b) deductively. Give reasons for the method you prefer.
4. Explain and criticise the maxim: "Processes before rules." Give illustrations from arithmetic.
5. "In the teaching of any school art clear and correct ideals should inspire and guide practice." Justify this statement. Show how it applies in penmanship or composition.
6. Describe and compare as to educational value the question and topic methods of testing a pupil's knowledge.

*Organisation, Management and Law.*

1. Upon what bases will you classify pupils in a school opening for the first time ?
2. (a) Upon what bases will you promote pupils ?  
(b) What legal check is imposed upon the teacher's promotion of his pupils ?
3. State the purposes of recesses and discuss the duties of teachers in connection therewith.
4. Mention the chief considerations that should guide a teacher in the construction of a time table.
5. How will you deal with any two of the following offences : Tardiness, theft, impertinence ?
6. Discuss the problem of home work in rural schools.
7. State briefly the substance of the provisions of The School Ordinance with regard to the selection of reference books and apparatus, the suspension of pupils, mode of estimating the salary of a teacher who has been engaged in a district at least four months continuously, wilful interruption of a school in session.

*Literature, Reading, Spelling.*

God bless her, wheresoe'er the breeze  
 Her snowy wing shall fan,  
 Beside the frozen Hebrides,  
 Or sultry Hindostan ;  
 Where'er in mart or on the main,  
 With peaceful flag unfurled,  
 She helps to wind the silken chain  
 Of commerce round the world.

Speed on the ship but let her bear  
 No merchandise of sin,  
 No groaning cargo of despair  
 Her roomy hold within ;  
 No heathen drug for Eastern lands,  
 Nor poison draught for ours ;  
 But honest fruits of toiling hands  
 And nature's sun and showers.

Be hers the prairie's golden grain,  
 The desert's golden sand,  
 The clustered fruits of sunny Spain,  
 The spice of Morning-land !  
 Her pathway on the open main  
 May blessings follow free,  
 And glad hearts welcome back again  
 Her white sails from the sea !

1. Give a title for this selection.
2. State concisely the thought of each stanza.

3. Indicate how to teach the two chief figures of speech in the first stanza.

4. (a) Mention three difficulties pupils in Standard IV would probably have in studying the second stanza.

(b) Ask questions that will lead pupils to overcome these difficulties.

(c) Answer these questions.

5. Give examples of seat work to be assigned pupils who had just been taught this selection.

6. Give illustrations of the preparatory work to be done with pupils before testing them on the spelling of the difficult words in the selection.

"At length we stopped before a very old house bulging out over the road; a house with long low lattice windows bulging out still farther, and beams with carved heads bulging out too, so that I fancied the whole house was leaning forward, trying to see who was passing on the narrow pavement below. It was quite spotless in its cleanliness. The old-fashioned brass knocker on the low arched door, ornamented with carved garlands of fruit and flowers, twinkled like a star; the two stone steps descending to the door were as white as if they had been covered with fair linen; and all the angles and corners, and carvings and mouldings, and quaint little panes of glass, and quainter little windows, though as old as the hills, were as pure as any snow that ever fell upon the hills."

7. Ask not more than four questions to lead pupils to discover the chief impressions which Dickens aimed at producing in the description. Answer each question briefly.

8. Ask questions intended to lead pupils to see the force of "trying to see who was passing on the narrow pavement below."

9. State the uses and limitations of the "word" and "phonic" devices in teaching primary reading.

10. Outline plans for securing expressive oral reading in the first two standards.

### *Grammar and Composition.*

No endeavour is in vain,  
Its reward is in the doing,  
And the rapture of pursuing  
Is the prize the vanquished gain.

1. Ask questions that should lead pupils in Standard V to determine whether each "is" in this stanza is a "notional" or a "relational" verb.

2. Ask questions that should lead pupils to parse the phrases "in vain," "in the doing."

3. Show how you will lead pupils to parse "no" and "vanquished."

4. In what way does the parsing help pupils to read this stanza?

5. Show by means of questions, etc., how you will prepare pupils in Standard II to write a composition on the picture in Part II Reader page 25. Write such a composition as you expect.

6. Give illustrations of how you will teach children in Standard II to write direct quotations.

7. Show by a specific example how you will utilise a nature study, geography or history lesson as a composition exercise in Standard III. Write the first two paragraphs of such a composition.

8. Show how you will teach pupils in Standard IV to write a letter to the Century Co., Union Square, New York, containing a money order for three dollars to pay for one year's subscription to "St. Nicholas." The subscription to begin with the November number.

Write the letter.

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### *Nature Study and Hygiene.*

1. What are the general aims of nature study in the junior standards?

2. Outline the observational work that should be required by pupils preparatory to a class lesson on the gopher, duck or grasshopper. State the specific aims of this lesson.

3. Give notes of a lesson on the apple to show the adaptation of its colour, form and taste to the development and dissemination of its seeds.

4. Give the facts and outline the method to be used in studying "clouds" in Standard II. What literature would you read with your pupils while continuing the study of clouds?

5. Give notes of a lesson to pupils in Standard IV on the preparation of soil for a crop of carrots; or on the preparation of unbroken prairie for a crop of wheat.

6. Give notes of a lesson on how to disinfect a room in which a person has been ill with a contagious disease.

7. Give notes of a lesson to pupils in Standard IV on bathing.

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### *Geography and History.*

1. Illustrate how you will teach pupils to interpret maps.

2. (a) Indicate the nature of the instruction you will give to Standard II on the characteristic animals, plants and peoples of the continents.

(b) Name the animals of Asia, the peoples of Africa and the plants of South America you would teach to this standard.

3. By reference to Ontario, British Columbia, Nova Scotia and the Territories show how you will teach the relation between natural products and manufacturing and distributing centres.

4. Outline a lesson on the comparative study of the continents of South America and Eurasia. Your lesson is to show how relief affects climate.

5. (a) Give a lesson plan on one of the following characters: Champlain (Standard II), Sir John Macdonald (II), Wolseley (III), Victoria (III).

(b) What is the purpose of this study in this standard.

(c) Show how your lesson fulfils this purpose.

6. (a) Discuss the advantages of the topic method in history.
- (b) Give headings of topics of political growth under the Plantagenets, or under British rule in Canada (Standard V.)
7. How would you use the life of William Lyon Mackenzie in teaching a similar figure in British History?

### *Geometry and Mensuration.*

*Note—Instruments—ruler, protractor, compass and triangle. Accuracy of drawing is required in construction. All construction lines to be left.*

1. For what reasons should geometry be taught? What, if any, benefits are derived from it which may not be obtained as well from arithmetic or algebra?
2. Outline a lesson on surface, line and point.
3. A B C D is rectangle. Divide it into five equal parts. Prove each step.
4. (a) Construct an angle of  $120^\circ$ . (Use compass and ruler only.)
- (b) Of what regular figure is this an angle?
5. In five questions or less show how a class can be led to construct a parallelogram, given one side, one angle and one diagonal.
6. One side of a room in the form of a regular pentagon is 12 m. long. From the centre to the middle of one side is 80.56 dm. Find the cost of painting the floor at 50c. a hundred square feet.
7. Your pupils tell you that the perpendicular bisectors of the three sides of a triangle meet at a point, but they cannot prove it. Give a series of questions that will lead them to the proof.
8. Illustrate your methods of attacking a theorem in Euclid. Refer to Euclid for examples of each.

### *Arit̄metic and Algebra.*

1. What is meant by "counting" in primary work? Show how it assists the child in acquiring a knowledge of number. When should the process be discontinued?
2. (a) Outline your method of teaching the numbers from 12 to 25. (I Part 2.)
- (b) How would you teach the fractions of 16?
3. Give methods for drill in calculation in Standard II.
4. "4 lbs. of flour make 5 lbs of bread and 1 loaf weighs  $1\frac{1}{2}$  lbs. Find the cost of the flour in 100 loaves when it is \$6 a bbl. of 196 lbs."
- (a) What difficulties will you expect a pupil in Standard III to have with this question?
- (b) Give four questions that you would ask to lead him to the solution.
5. A and B invested the same amount of money in business. At the end of 3 years it was found that A's capital was \$500 less than he had at



first, that B's capital was \$1,500 less than twice his original capital, and that the combined capital had increased 25%. What was the original capital of each?

- (a) Give an (1) arithmetic and (2) an algebraic solution to the above.  
(b) Show the advantage one solution has over the other.

6. How do you account for the fact that algebra is often quite meaningless to beginners? How would you prevent this?

7. (a) Using the following equation as a type show how simultaneous equations should be attacked.

- (b) Give the best solution you can.

$$\begin{array}{r} 2x \quad 3y \quad z \\ \frac{\phantom{2x}}{5} + \frac{\phantom{3y}}{10} - \frac{\phantom{z}}{5} = 9 \\ \frac{x}{z} + 8 = 10 \\ \frac{4x + 3y - 2z}{3} = 30. \end{array}$$

#### *Drawing.*

1. (a) Outline a form lesson on the cube to a class in Standard I.  
(b) Describe a drawing lesson on the cube to a class in Standard II.
2. Sketch a partly open chalk box, placed slightly below the level of the eye.
3. Hang a man's coat on a nail in the wall or on the back of a chair and sketch.
4. Sketch a snow capped mountain with trees on its lower slopes or a range of mountains.
5. Make three sketches illustrating the germination of a pea.
6. Illustrate the following :  
"By the shores of Gitche Gummee,  
By the shining Big Sea Water,  
Stood the wigwam of Nokomis."

#### *Music.*

1. Give time names for two-part, three-part and four-part measures.
2. Define and illustrate the following terms : Major scale, chromatic scale, staff, note, rest.
3. Write four measures of music in each of the following keys : E, F, Bb.
4. Give instructions for getting from a C pitch pipe, the following keys : G, Eb, D.
5. Indicate how you would endeavour to secure (a) expressive singing, (b) good articulation, (c) softness and purity of tone.

6. Name, with reasons, three songs which you think suitable for pupils in Standard I ; also three songs which you consider suitable for Standards III and IV.

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SECOND CLASS.

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*Psychology.*

1. What is interest? Describe how it is aroused and how it is related to attention.
2. Show how judging enters into the process of perception and conception.
3. What are the main causes of incorrect judgments? Show how you will endeavour to train children to avoid each.
4. What rules govern the formation of definitions? Illustrate each.
5. "We have not properly observed unless we can describe what we observe." To what extent is this statement true?
6. Show the difference between apperception and attention; between apperception and perception; between apperception and memory.
7. Write notes on the following statement: "It is possible by the non-exercise of certain feelings and the constant exercise of others, to create in man, in a certain sense, a new creature."—White.
8. Describe how a child's free will may be exercised while a due measure of authority is maintained.

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*Pedagogy.*

1. (a) Define from the standpoint of the school the purpose of education as you understand it.  
(b) Show the bearing your definition has on the demand that our schools shall give special preparation for particular callings.
2. Discuss the advantages and disadvantages of the ungraded school.
3. What are the main principles underlying the construction of a time table for an ungraded school?
4. To what extent and in what way is it desirable that a teacher should concern himself with the games and recreations of his scholars?
5. (a) What are the objects of punishment in school? On what does its efficiency depend?  
(b) Mention some approved forms of punishment and the offences to which they would apply.
6. Write notes on the different devices for fixing instruction in the mind of a pupil.
7. Discuss the relative place of oral and book instruction in school.

*School Organisation, Management and Law.*

1. Describe a properly heated and lighted school room.
2. Write a note on the seating of pupils in an ungraded school.
3. Discuss the problem of home work.
4. By what tests will you determine the fitness of a pupil for promotion.
5. Discuss the advantages and disadvantages of a uniform system of class tactics.
6. Tell how you will deal with any two of the following : Whispering, fighting, tardiness, swearing, lying, copying.
7. State briefly the substance of the provisions of The School Ordinance with regard to engagement and payment of a teacher, suspension of a pupil, compulsory attendance of pupils, vacations in schools open only during a portion of the year, religious instruction.

*Literature and Reading.*

As ships, becalmed at eve, that lay  
 With canvas drooping, side by side,  
 Two towers of sail at dawn of day  
 Are scarce long leagues apart descried ;  
 When fell the night, up sprung the breeze,  
 And all the darkling hours they plied,  
 Nor dreamt but each the self same seas  
 By each was cleaving, side by side ;  
 E'en so—but why the tale reveal  
 Of those, whom year by year unchanged,  
 Brief absence joined anew to feel,  
 Astounded, soul from soul estranged ?  
 At dead of night their sails were fill'd,  
 And onward each rejoicing steer'd—  
 Ah, neither blame, for neither will'd,  
 Or wist, what first with dawn appear'd !  
 To veer, how vain ! On, onward strain,  
 Brave barks ! In light, in darkness too,  
 Through winds, and tides one compass guides—  
 To that, and your own selves, be true.  
 But O blithe breeze ! and O great seas,  
 Though ne'er, that earliest parting past,  
 On your wide plain they join again,  
 Together lead them home at last.  
 One port, methought, alike they sought,  
 One purpose hold where'er they fare,—  
 O bounding breeze, O rushing seas !  
 At last, at last, unite them there.

1. Illustrate how you will lead pupils to give in a phrase or short sentence the subject of this poem.

2. Write such an abstract of this poem as will reveal its inner meaning.
3. Illustrate how you will bring out the force of "darkling hours," "soul from soul estranged," "one compass guides."
4. How will you lead pupils to see the use and appropriateness of "blithe" and "bounding" as applied to "breeze" in stanzas VI and VII ; of "great" and "rushing" as applied to "seas" in the same stanzas?
5. Illustrate how you will lead pupils to perceive the effect of the change in metre in the last three stanzas.
6. Indicate how you will lead pupils to determine the rates of reading in stanzas I and V.
7. Describe the word and phonic devices for teaching young children the first steps in reading. Criticise them.
8. Describe sight reading, supplementary reading and pattern reading by the teacher. State the value of each.

Grammar and Composition.

1. Discuss the value and use of English grammar as a subject of school study.
2. (a) Show how you will lead pupils in Standard IV to classify the following sentences: (i) The alarm rang. A crowd came rushing down the street. (ii) The alarm rang and a crowd came rushing down the street. (iii) When the alarm rang the crowd came rushing down the street.  
(b) Show how this classification helps pupils to perceive more clearly the difference in thought between sentences (ii) and (iii).
3. (a) State the difficulties that pupils in Standard V would probably experience in the analysis and parsing of the sentence: Dust thou art to dust returnest was not spoken of the soul.  
(b) Indicate how you will deal with the principal difficulty in each process.
4. Make notes of a lesson on any two of the following: A noun in apposition, imperfect participle, auxiliary verb, inflection of an adjective, subordinative conjunction.
5. Outline a composition exercise in Standard II based upon any one of the following pictures: The Shepherdess, The Angelus, The Watering Trough. State definitely the specific object of your exercise.
6. What instruction will you give pupils in Standard III to enable them to write a composition on an orange? Make a copy of your black-board summary.
7. How will you lead pupils in Standard V to see in what respects the following paragraph is faulty? Indicate the corrections you will lead them to make:  
"The crocodile does not attempt to swallow a large prey at once, but generally carries it away, and keeps it for a considerable time in its jaws in some deep hole beneath a rock or at the root of a tree, where it

eats it at leisure. The tongue of the crocodile is so unlike that of any other creature that it can hardly be called by the same name. No portion of it is detached from the flesh of the lower jaw ; it is like a thickened membrane extending from the gullet to about half away along the length of the jaw."

### *History.*

1. Discuss the advantages of beginning the study of history with stories of persons. Would you begin with real or with ideal persons? Why?
2. Give illustrations of how knowledge of physical geography aids in teaching history.
3. Discuss the value of historical novels and poems in teaching history. Give illustrations.
4. Make a lesson plan for teaching Alfred, John Hampden, Wellington, Laval, or William Lyon Mackenzie.
5. Give notes of lessons on any two of the following and state the purpose of each lesson: Quebec Act, Clergy Reserves, Seigniorial Tenure, Reciprocity Treaty, Spanish Armada, Wat Tyler's Rebellion.

### *Geography and Elementary Science.*

1. Discuss the reasons for the important place geography occupies in the school programme.
2. Account briefly for the chief changes in the rock envelope of the earth.
3. Show how a knowledge of relief throws light on the progress of civilisation.
4. Give a method for presenting either (a) peninsula, in Standard II., or (b) clouds, in Standard I.
5. Arrange topics for a series of lessons on the continent structure of Eurasia to Standard V. Write a summary of what you will teach on any one topic.
6. Outline a lesson on the grasshopper, the light relations of leaves, some plant's means of defence, or the adaptation of the form and structure of the bill and feet of the woodpecker to its mode of life.
7. Make notes of a lesson on the destruction of any noxious weed, tree planting, or the restoration of exhausted soils.
8. Make notes of a lesson on the care of the eyes, or the ears of school children.

### *Geometry and Mensuration.*

*Note: Instruments—ruler, protractor, compass and triangle. Accuracy of drawing is required in construction.*

1. Criticise the following geometric definitions:

(a) "All perpendicular lines are parallel."

(b) "All horizontal lines are parallel."

(c) "An angle is the inclination of two straight lines to one another."

2. "Geometry is the art of correct reasoning on bad figures." Comment on the desirability of accurately drawn figures.

3. Erect a perpendicular at the end of a line A B without producing the line. Prove. (Use compass and ruler.)

4. (a) Show how you would teach (i) inductively (ii) deductively that the three angles of a triangle are equal to two right angles.

(b) How will you apply this knowledge to the determination of different classes of triangles?

5. Construct a trapezoid, given the bases, the altitude and one leg.

6. Two roads BA and CA meet at A, forming an angle of  $75^\circ$ . Mr. X's house lies in the direction of BA, and Mr. Y's of CA. Both houses are inside the arms of the angle BAC. The nearest point on the road BA is  $\frac{1}{2}$  mile from Mr. X's house. From this point it is three miles to A. It is one mile from Mr. Y's house to the road and eight miles from there to A. A school house is to be erected on one of the roads equidistant from the houses. How far will it be from the houses? Draw to scale of an inch to a mile.

7. (a) Bisect a given rectilineal angle. (I. 9.)

(b) If one side of a triangle be greater than another, the angle opposite the greater side is greater than the angle opposite the less. (I. 19.)

By means of these illustrate how your methods of teaching a theorem differ from those used in teaching a problem.

### *Arithmetic and Algebra.*

1. Discuss fully the value of arithmetic as a school study.

2. "Counting is the fundamental operation in arithmetic." *Committee of Fifteen.*

(a) What is involved in this process?

(b) Show the bearing of this truth on the way you will begin arithmetic.

3. How far you will strive to obtain accuracy in arithmetic. Give reasons?

4. (a) Make a two-step problem involving the processes multiplication and partition. (M.P.)

(b) Show how you would lead a pupil in Part II over the difficulties in this problem.

(c) Give an acceptable solution.

5. Point out the probable difficulties which your pupils will meet in the following problem. Show in detail by what exercises you will put them in a position to overcome these difficulties, and give an acceptable solution of the problem.

"The circumference of a wheel is  $3\frac{1}{2}$  times the diameter. If the wheel of a locomotive be 5.52 feet in diameter, how many revolutions a minute does it make when the locomotive is running 13.34 miles an hour?"

6. (a) Give an "arithmetical" and an "algebraical" solution to this question :

"The buildings on a farm are worth \$125 less than the land. If  $\frac{2}{3}$  of the value of the land equals  $\frac{3}{4}$  of the value of the buildings, find the value of each.

(b) By means of this question show what, in your opinion, is the difference between the two subjects.

7. Give examples of the principle that a question should be analysed before its solution is attempted.

Apply this principle to the following :

$$x + 2y + 3z = 14$$

$$2x + 3y + z = 11$$

$$3x + y + 2z = 11$$

A and B play for a stake of \$5. If A loses he will have as much as B, but if A wins he will have three times as much as B. How much has each ?

(a) Illustrate your manner of teaching this problem.

(b) Give an acceptable solution.

(c) Make another problem, involving the same principle in different form.

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#### FIRST AND SECOND CLASS.

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#### *Drawing.*

1. Make a sketch (side view) of the presiding examiner. (Time—fifteen minutes.)

2. Make a shaded drawing of the presiding examiner's hat or cap.

3. (a) Make a shaded drawing of the cylinder, cube and hemisphere arranged in a group.

(b) Make a sketch of a group of objects based on these models.

4. Illustrate simply any two of the following :

(a) The foot and bill of the duck.

(b) The germination of a bean.

(c) A mountain chain.

(d) "——a full-fed river winding slow

By herds upon an endless plain,

The ragged rims of thunder brooding low

With shadow-streaks of rain."

5. Draw the projections of a rectangular box two feet long, one foot wide, and six inches deep, with one partition across the centre of the box. Material, an inch thick ; scale, one quarter full size.

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#### *Music.*

1. Write four bars of music,  $\frac{4}{4}$  time, in each of the following keys: G, F, E $\flat$ .

2. Give instructions for getting from a C pitch pipe, the following keys: E, A, B $\flat$ .

3. Write the chromatic scale.
4. Write the first four measures of "God Save the King" in the key of  $F_4^{\sharp}$ .
5. Name four songs you consider suitable for children in an ungraded school. State your specific purpose in selecting each.
6. Define and illustrate: scale, accidental, slur, hold.

## FIRST CLASS.

*Philosophy of Education.*

1. "The state includes the school as one of its educational instrumentalities."—*Rosenkranz*. "All that Society has accomplished for itself it puts, through the agency of the school, at the disposition of its future members."—*Dewey*.

Discuss the proper work of the school as an educational instrumentality.

2. Discuss the uses of text books, oral instruction and libraries in the teaching process.

3. Describe the systems of punishments recommended by Rosenkranz and Spencer, and criticise each.

4. "Proof must be analytic, synthetic or dialectic." Distinguish these and show the value of each as a teaching process.

5. Distinguish, after Laurie, nutrition, training and discipline, using natural science and literature as illustrations.

6. "Proceed from the known to the unknown." Examine the truth of this maxim from the standpoint (*a*) of the arrangement of subject matter, (*b*) of the contents of the mind.

7. "There are necessary limitations to its (manual training) usefulness and its expedient for us to recognise them."—*Sir Joshua Fitch*. Discuss the purposes, uses, and limitations of manual training.

*Psychology.*

1. "The order of development of the nerve-centres is of importance to the educator." Explain and illustrate.

2. Describe "attention." State somewhat fully the chief laws of attention showing applications of each in school work.

3. "The work of exercising children in the best kind of sense perception is a much more complex process than it at first looks." Describe the process and give a particular illustration.

4. Describe in a general way modes of cultivating the memory.

5. Describe, after De Garmo, how the general notion is formed. Show the necessity for constant return from general to individual notions.



6. Comment upon the educational value of the emotion of rivalry, under the heads : origin, characteristics, and management.

7. Outline the growth of the moral sentiment and indicate how moral instruction should be given in the first stages of education.

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### *History of Education.*

1. Describe somewhat fully Athenian education and compare its ideals with ours.

2. Mention the essential characteristics of Roman education and show whether they appear in our system.

3. Contrast chivalric and monkish (Schoolmen and Fathers) education.

4. Sketch the educational work of John Sturm or Comenius.

5. Give a summary of the educational views of Rousseau or Froebel.

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### *School Organisation, Management and Law.*

1. Describe a properly lighted and ventilated schoolroom.

2. What considerations should guide in determining the classification of a new pupil ?

3. Discuss the relation of seat work to class work from Standard IV upwards.

4. Discuss the problem of home work in Standards above the Fourth.

5. Discuss the relations of a principal to his assistants in matters of instruction and discipline of their pupils.

6. Comment upon the use of artificial incentives.

7. State briefly the substance of the provisions of The School Ordinance with regard to the locating of the site for a schoolhouse in a rural district, the qualification of candidates for school trustee, the auditing of books and accounts in rural and village districts, the use of languages other than English and French in rural schools, religious instruction.

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### *Literature and Reading.*

“ For this true nobleness I seek in vain,  
 In woman and in man I find it not ;  
 I almost weary of my earthly lot,  
 My life-springs are dried up with burning pain.”  
 Thou find’st it not ? I pray thee look again, 5  
 Look *inward* through the depths of thine own soul.  
 How is it with thee ? Art thou sound and whole ?  
 Doth narrow search show thee no earthly stain ?  
 Be noble ! and the nobleness that lies  
 In other men, sleeping, but never dead, 10

Will rise in majesty to meet thine own ;  
 Then wilt thou see it gleam in many eyes,  
 Then will pure light around thy path be shed,  
 And thou wilt never more be sad and lone.—*Lowell.*

1. Analyse the octave so as to show the substance of each quatrain and their connection in thought.
2. Show how each tercet is related in thought to the octave.
3. Give the rhyme scheme. What effect is produced by this departure from the normal Italian types.
4. Indicate how you will teach the figurative language in l. 4.
5. Show how you will lead pupils to see the force and appropriateness of "sleeping," l. 10; "gleam," l. 12; "pure," l. 13.
6. What effects, according to Laurie, should be produced by the thorough study of such a selection as this?
7. Indicate how you will teach inflection in l. 7; phrasing in ll. 9—11; rates of reading in the quatrains.
8. By what tests will you determine whether a pupil's oral reading of this sonnet is satisfactory?

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*Grammar and Composition.*

1. "Grammar is the science of predication." "Through the logical forms of subject, predicate and modifier grammar reveals the essential nature of thought." Explain these statements and show their bearing on method in teaching grammar.
2. State the difficulties that pupils in Standard VI would probably experience in the analysis and parsing of the following extract. Indicate how you will deal with the principal difficulty in each process.  
     Fallen cherub, to be weak is miserable,  
     Doing or suffering; but of this be sure,  
     To do aught good never will be our task,  
     But ever to do ill our sole delight.
3. Make notes of a lesson on any two of the following: restrictive clauses, the classification of adjectives, the subjunctive mood, verbs of the new conjugation, sequence of tenses, the position of adverbs.
4. Show how in a reading or composition lesson the grammatical study of the following extract may be turned to use:  
     Ere, in the northern gale,  
     The summer tresses of the trees are gone,  
     The woods of autumn, all around our vale,  
     Have put their glory on.
5. What instruction will you give pupils in Standard IV who are about to write a composition on William the Conqueror, or the preparation of virgin prairie for a crop of wheat? Make a copy of your black-board summary.
6. How will you lead pupils in Standard VI to see whether the following extract is faulty in paragraph or sentence structure. Indicate any corrections you may lead them to make.

"The storm still followed me, when I retired into my cabin. The whistling of the wind through the rigging sounded like funeral wailings. As the ship laboured in the weltering sea, the creaking of the mast, the straining and groaning of bulkheads were frightful. It seemed as if death were raging round this floating prison, seeking for his prey, as I heard the waves rushing along the sides of the ship and roaring into my very ear; the mere starting of a nail, the yawning of a seam might give him entrance. A fine day with a tranquil sea and a favouring breeze, soon put all these dismal reflections to flight. It is impossible to resist the gladdening influence of fine weather and fair wind at sea. How lofty, how gallant, a ship appears—how she seems to lord it over the deep, when the ship is decked out in all her canvas, every sail swelled, and careering gaily over the curling waves."

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*Geography and Elementary Science.*

1. (a) "Geography is the knowledge or science of the present appearance of the earth's surface." Critise this definition.
2. Discuss with illustrations, the relations of slope and contour to external and internal commerce.
3. Indicate in a general way how you would show that physical surroundings affect the building up of cities. Refer to cities in Canada, the United States, Europe and Asia—at least two in each.
4. Show how the three envelopes of the earth (aqueous, atmospheric and rock) are constantly acting and reacting on each other.
5. Give in order a series of topics for the study of a continent. Account for this order.
6. Write a lesson plan for Standard V on dew.
7. Outline a lesson on the light relations of leaves, some plant's means of defence, or the adaptation of the form and structure of the bill and feet of the woodpecker to its mode of life.
8. Make notes of a lesson on the destruction of any noxious weed-tree planting, or the restoration of exhausted soils.
9. Make notes of a lesson on the care of the eyes, or the ears of school children.

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*History.*

1. "The accumulation of facts is not the sole or perhaps not the leading purpose of studying history."  
 "Any comparison between history and science is apt to be misleading. The method of the one study for purposes of instruction at least, is not the method of the other."  
 Discuss the purpose and method of instruction in history in elementary schools; in advanced schools.
2. In the Report of the Committee of Seven (American Historical Association) the following sequence for high schools is recommended: (1) Ancient history with special reference to Greek and Roman history;

(2) Mediæval and modern European history ; (3) English history ; (4) American history. Criticise this order.

3. What are the advantages of an intensive study of a period in history ? What are the necessary conditions for such study ?

5. Give notes of lessons on any two of the following : Battle of the Plains of Abraham, Constitutional Act, National Policy, Simon de Montfort, Corn Law (1815), Feudalism in England. State the chief purpose of each lesson.

4. "History reveals an evolution of forms of government that are better and better adapted to permit individual freedom."—*Harris*.

Show how you will illustrate this in teaching Canadian history.

### *Geometry and Mensuration.*

*Note.*—*Instruments: Ruler, protractor and compass. Accuracy of drawing is required in constructions.*

1. In our teaching of geometry inventional work precedes demonstrative and both of these precede Euclid. Account for this order.

2. Criticise the following definitions : A line is the shortest distance between two points. A rectangle is a parallelogram all of whose angles are right angles. An angle is the inclination of two straight lines to each other.

3. Give examples of surfaces equivalent but not similar, lines similar but not equal, similar solids not equivalent.

4. (a) Draw a line parallel to a given line AB through a given point C, using only ruler and compass.

(b) Draw an equilateral triangle with its base on AB and its vertex on the parallel obtained in (a).

5. Prove that the method of measuring angles by a protractor is correct.

6. (a) Outline your method for finding the area of a circle. (b) Name the lessons or steps that have led up to the area of this figure.

7. "The lateral surface of a cone equals one half the circumference of the base multiplied by the slant height." (a) Indicate how you will lead a pupil to infer this rule. (b) Construct a problem to illustrate the application of the rule.

8. Outline different ways of presenting a problem in Euclid. Apply in "To draw a straight line perpendicular to a given straight line of unlimited length from a given point without it." (1. 12).

### *Arithmetic and Algebra.*

"They recommended that the course in arithmetic be at once abridged and enriched; abridged by omitting entirely those subjects which perplex and exhaust the pupil without affording any really valuable mental discipline, and enriched by a greater number of exercises in simple calculation, and in the solution of concrete problems."—*Committee of Ten*.

1. (a) What light on the objects of arithmetic is shown by this recommendation?

(b) Name the main subjects that may be omitted?

2. Write notes on the use and abuse of the text in arithmetic.

3. Outline a general plan for a series of lessons on vulgar fractions.

4. (a) Give general directions for introducing a new type of problem, *e. g.*, a three-step question. State the reason for your manner of procedure.

(b) Make and solve a problem involving the steps, multiplication, subtraction and partition. (M.S.P.)

5. In about half a dozen statements outline your first six lessons in algebra so as to reveal your manner of treating this subject.

6. From what simpler form will you teach  $(a+b+c)^2$ , and  $(a^3 + 3a^2b + 3ab^2 + b^3 + c^3) \div (a+b+c)$

7. Outline a plan for teaching:

$$\frac{1}{2}(x+y) - \frac{1}{3}(x-y) = 8$$

$$\frac{1}{3}(x+y) - \frac{1}{4}(x-y) = 1$$

Write out an acceptable solution.

8. A has three times as many dollars as quarters; B who has \$9.75 more than A, has an equal number of quarters and dollars. Together they have four more dollars than they have quarters. How much money has each?

(a) What probable difficulties will a pupil in Standard VI have with this problem? Show how you will deal with them.

(b) Give an acceptable solution.











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